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ABSTRACT

The pricing of household work can be based on standardized times established for component parts of the job. Techniques for determining these standardized times and the component parts were developed in a study conducted at Purdue University and supported by a federal grant. After a preliminary survey of homemaker practices in cleaning living areas of 20 homes, a laboratory study was made which used eight household workers to perform dusting operations under controlled conditions. A work estimation formula was derived from these task situations. A multiple regression model was developed from the dusting and vacuuming of 20 family-living areas of 12 nonrandomly selected households by graduate research and laboratory assistants. Quota sampling was used to select 32 homes in which a regression equation was used to establish the factors most useful in predicting time use from a replication of the previous tasks by seven household workers. The following independent variables were important in estimating or predicting variation in cleaning time: (1) square foot area of the room, (2) moved-item density of the room, (3) total furniture density, (4) accessory rating, (5) type of heating, (6) percentage of carpet in the room, (7) dexterity time score of the worker, and (8) other variables relating to the furniture and the homemaker. (Author/AG)

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Janet L. Vaughn

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West Lafayette, Indiana 47907

January 1972

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TABLE OF CONTENTS

	Page
List of Tables	
List of Figures	
Preface	1
Acknowledgments	3
Summary	4
Introduction	7
Background for the Study	7
Rationale' for the Study	12
Objectives of the Study	14
Procedure	15
Objective 1	15
Objective 2	15
Objective 3	16
Results	18
Objective 1	18
Objective 2	18
Objective 3	26
Household Workers	46
Conclusions	48
Objective 1	48
Objective 2	48
Objective 3	49
Recommendations	51
References	53
Bibliography	56
Appendix A. Homemaker's Questionnaire	57
Appendix B. Quality Standards for Room Evaluation	60
Appendix C. Procedure for Data Collection	61
Appendix D. Project Periscope with Recommendations for Further Study	67
Appendix E. Home Economics Occupations	71

LIST OF TABLES

		Page
Table 1.	Independent Variables Used in Multiple Regression Analysis for Nonrandom Home Phase	28
Table 2.	Multiple Regression Analysis for Nonrandom Home Phase	29
Table 3.	Order of Variable Inclusion, Multiple Regression Analysis, for Nonrandom Home Phase	30
Table 4.	Comparison of Estimated and Actual Cleaning Time by Percent of Error for Nonrandom Home Phase.	31
Table 5.	Frequency Distribution by Percent of Error of Rooms Cleaned for Nonrandom Home Phase. .	32
Table 6.	Occupation of Head of Household, Random Home Phase	35
Table 7.	Identification by Household Worker Number and House Number of the Rooms Cleaned, Random Home Phase	36
Table 8.	Independent Variables Used in Multiple Regression Analysis for Random Home Phase. .	40
Table 9.	Multiple Regression Analysis for Random Home Phase	41
Table 10.	Order of Variable Inclusion, Multiple Regression Analysis, for Random Home Phase .	42
Table 11.	Comparisons of Estimated and Actual Cleaning Time by Percent of Error for Random Home Phase.	43-4
Table 12.	Frequency Distribution by Percent of Error of Rooms Cleaned for Random Home Phase . . .	45

LIST OF FIGURES

		Page
Figure 1.	Conceptual Framework for Items Cleaned Weekly.	19
Figure 2.	Conceptual Framework for Cleaning Processes Used.	20
Figure 3.	Laboratory Task Situations.	21-2
Figure 4.	Floor Item Arrangement for Low Floor Item Density Task Situations (E,G) and for High Floor Item Density Task Situations (B,D)	23
Figure 5.	Quota Sample Design for Selection of Respondents, Random Home Phase.	34

PREFACE

The National Committee on Household Employment was established in 1965 by a group of volunteer organizations as a nonprofit organization. The Committee serves as a clearinghouse and coordinator for private organizations interested in the field of household employment. The NCHE concerns itself with these types of problems:

.upgrade the status of private household employment,

.develop job and training opportunities in household and related organizations,

.leadership in the establishment and promotion of standards for private households, and

.liaison activities between government agencies with a mutual interest in this field.

A national survey of private household employees and employers was completed in December 1965 by the NCHE. The most important finding, in the opinion of the Committee, was that a high percentage of workers indicated a willingness to take training that would not only improve their wages but would also show them how to perform their work more efficiently and expeditiously.

Assisting with the development of training programs, the NCHE found that the time needed to do household jobs based on efficient methods is not known. Time studies which have been done focus on the gross measurement of time use in household tasks: time spent in a week for daily and weekly care of the house. Such data are of limited use in estimating time requirements in houses of specific sizes or with specific cleaning problems.

The major conclusion of a study done by the Fry Consultants, Inc. for the Economic Development Administration of the U.S. Department of Commerce in 1966 was that the mechanism for bringing the demand and the supply for household workers together is faulty. Interposing reliable companies between the housewife and the worker was advocated to remedy such a fault. However, a major problem found in doing this is that the pricing or bidding of jobs is difficult.

Thus, the problem is: what is the standardized time for the performance of various household jobs by a household worker? Data are needed on task definitions and procedures as well as standards of time for performance of the task. Such information would be useful in pricing household service and basic in the training of household workers to perform the various household jobs within definitions and standards set.

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SUMMARY

The pricing of household work can be based on standardized times established for component parts of the job. The techniques for determining these standardized times and the component parts have been developed in a study conducted at Purdue University and supported by a grant from the Office of Education.

A survey of homemaker practices in cleaning living areas of their homes was first conducted to find out what furniture, accessories, floor coverings, and structural features were most common, what methods of cleaning were most used, with what frequency the cleaning was done, and what critoria determined when the work was satisfactorily done.

From these data, a laboratory study was made on the selected component of dusting the furniture and accessories, using identical rooms in which the density of the furniture, the density of the accessories on the furniture, and the ornateness of the furniture and accessories could be varied in a systematic manner. Eight household workers were selected and trained to perform the dusting operations using a specified procedure to yield satisfactory results. Under these controlled conditions it was possible to derive a work estimation formula as follows:

Estimated time = $C + X_1 + X_2 + X_3$,

Where C = a constant, or 34 minutes average time

X_1 = the ornamentation factor: -5 minutes if plain,
+5 minutes if ornate

X_2 = the floor item density factor:
-4 minutes if low,
+4 minutes if high

X_3 = the nonfloor item density factor:
-1 minute if low,
+1 minute if high

Twenty family-living areas of twelve nonrandomly selected households were used next to further develop the method in situations which could not be so rigidly controlled. The Project Graduate Research Assistants and Laboratory Assistants performed the task of dusting the furniture and accessories, and added the task of vacuuming the floor coverings. The variables used to predict the time used were expanded to include the floor area, the percentage of the floor area carpeted, the kind of heating system, the employment status of the homemaker, and a scale for rating the number of pieces of furniture which had to be moved in relation to the size of the room (the moved-item density). Again a regression equation was developed which gave an estimated time as follows:

Y (as estimated time) = S + DM + TD + AR - HE + C + EH,

With a constant of -16.95 minutes, and partial coefficients (in minutes) as follows:

S, room size: .12 x the square foot area of the room;

DM, density moved: 49.76 x moved-item density of the room;

TD, total density: 43.37 x total furniture density;

AR, accessory rating: .46 x the accessory rating;

HE, heat: -3.61 if the home has non-forced air heat;

C, carpet: 8.41 x the percentage of carpet in the room; and

EH, employed homemaker: 8.60 x the amount of time the wife works, (0 if she does not work, 1 if she works half-time, and 3 if she works full-time).

To further test the premise that observable and objective factors could be used in any home situation to estimate the components of the task of cleaning a house, thirty two homes were selected by quota sampling to assure a distribution by income, age group, employment of

wives, employment of household worker, geographic area, size of the family living area, density of furnishings, and availability of both a living room and a family room in the same house. Seven household workers dusted and vacuumed in thirty two living rooms and sixteen family living areas, and replicated the tasks in eight of the living rooms. The factors found most useful in predicting time use were established. The regression equation is as follows:

$$Y \text{ (as estimated time)} = I + H + S + U + CU + W_2 + DT,$$

With a constant of 13.66 minutes, and partial coefficients (in minutes) as follows:

I, income: 6.85 x 1 if annual income exceeds $25,000;

H, hours away from home: -.14 x the number of hours the homemaker was away from home;

S, room size: .05 x the square foot area of the room;

U, number of upholstered items: 3.02 x the number of upholstered items;

CU, number of removable cushions: .32 x the number of removable cushions;

W_2, wood furniture ornateness: 3.21 if the wood furniture was ornate; and

DT, dexterity time score: .99 x the dexterity time score of the worker who cleaned the room.

INTRODUCTION

Background for the Study

The homemaker of today spends as much total time on household tasks as did her counterpart fifty years ago (1, Hall and Schroeder, 1970): forty seven hours weekly. Changes in how the homemaker spends her working day were identified as:

increase in time spent at food preparation and dishwashing,

increase in time spent at house care, and

decrease in time spent at clothing care, family care, and management and shopping.

When making comparisons between full-time homemakers in 1952 and 1968 studies, very little difference was ascertained in total hours spent at homemaking tasks.

However, employed homemakers spent more hours at household tasks in 1968 than in 1952 (forty two and twenty nine hours weekly, respectively). Employed homemakers spent considerably less time at household tasks than full-time homemakers.

On the average in 1968, homemakers hired only half an hour of household help weekly.

Concepts of Household Help. At a 1967 consultation sponsored by the National Committee on Household Employment, the Women's Bureau, the YWCA of Metropolitan Chicago, and the Chicago Committee on Household Employment, Esther Peterson (2, Report of a Consultation, 1968) stated:

> "We need to develop new concepts of household help for the housewife. In a way the present situation is our fault; we have not put much economic value on what we do in our homes. Actually homemaking is one of the most skilled jobs. A very great

> part of the problem of women's employment has been that we put so low a value on the jobs we do. The homemaker needs to learn to organize her time. Then she can use the time of her household worker to better advantage. She will understand the relationship between wages and hours worked and other related problems."

There is an expressed need to think about the occupation of household care in new terms (3, Koontz, Nov 1970):

*isolate and study the core of skills involved,

*analyze the wide range of tasks actually performed, and

*determine the varying degrees of skill that these tasks require.

The Service Economy. By 1985 it has been estimated that the average U. S. family will be earning the equivalent of $15,000 in today's purchasing power as compared with $8,600 in 1969 (4, Miller 1970). Population growth will account for about thirty percent of the growth in terms of increased expenditures for housing, transportation, and recreation. The remaining seventy percent will result from affluence and will be manifested by a greater demand for more luxurious commodities and services.

Feldman believes that marketing is about to undergo a profound change by shifting its emphasis to nonmaterial consumption and societal considerations (5, Feldman, 1971). Emphasis would be shifted from the marketing of physical commodities which consume these resources to the marketing of services. Marketing of services includes both commercial services which benefit individual consumers, and firms, and social services which directly benefit society.

Also, Feldman indicates that a basic future marketing thrust would entail diverting consumers' increasing affluence away from the purchase

of material commodities toward the consumption of services. A most relevant example cited is: household cleaning and maintenance services using highly efficient equipment as a substitute for present marketing of individual household equipment.

Status of Household Employment. Few deny the importance of household employment. A greater need than ever before exists for different kinds of household assistance. But workers are leaving, not entering, this occupation. The number of household workers has declined by 351,000 but the number of working women has increased by over seven million during the last decade (6, Koontz, Nov 1970).

The data on the household employment situation issued in July 1969 by the Women's Bureau of the U.S. Department of Labor is included in order to make comparisons (7, Christensen, 1971).

Proposal for Household Occupation. To improve the conditions of household employment for those now in it, Mrs. Elizabeth Duncan Koontz, Director of the Women's Bureau of the U.S. Department of Labor, states (8, Koontz, Nov 1970):

> "The only way to provide all the fringes and to be businesslike is, in fact, to make the servicing of households a business. A household employment business has some real advantages. It can act as an intermediary between the householder that a skilled worker will complete agreed-upon tasks, or put in a set number of hours on a set day and perform at an acceptable level. For the household worker, it can set wage and labor standards, provide fringe benefits that are common to other occupations, and build in a dignity which all too often was lacking before. In addition, businesses can have the flexibility to experiment with new approaches to household work, such as developing specialists or trying team cleaning."

The latest data on the household employment situation issued in July 1969 by the Women's Bureau of the U.S. Department of Labor "Household Employment: Restructuring the Occupation"

In 1968 nearly 1.7 million women were employed as private household workers—including babysitters. Women constituted 98 percent of all workers in private household employment. [The data quoted here refer to women 16 years of age and over unless otherwise indicated.]

Annual wages in this occupation are very low:

In 1967 the median wage of even those women 14 years of age and over who were year-round full-time private household workers, including babysitters, was $1,298.

The total cash income—which included wage and self-employment income as well as all forms of social insurance and public assistance payments—of almost all women in this field of employment in 1967 was still very low:

83 percent had total cash incomes under $2,000, and 58 percent, under $1,000.

Median total cash income of the women who were year-round full-time workers —about one fifth the total—was $1,466.

It is estimated that nearly half of the women private household worker family heads reported incomes below the poverty level in 1967.

The low annual wages of all women private household workers reflect the intermittent character of their employment as well as their low rates of pay when employed:

Part time/full time

In 1968, 62 percent of the women private household workers worked part time (less than 35 hours a week).

Of the full-time workers, 64 percent worked between 35 and 40 hours a week. The remaining 36 percent worked longer hours.

Part year/full year

Of women private household workers in 1967:
More than 4 out of 10 worked 26 weeks or less;
Just under 2 out of 10 worked between 27 and 49 weeks; and
Only about 4 out of 10 worked 50 to 52 weeks.

A high proportion of women private household workers are heads of families:

An estimated 15 percent of the women in this occupation were heads of families in 1967.

More than a quarter of a million families were headed by women private household workers.

In 1960, two-thirds of the families headed by either men or women private household workers included children under 18 years of age. About one-fourth of the families with children under 18 had at least 4 children in the family.

Of the 1.4 million women 14 years of age and over who reported their occupations as dayworkers, housekeepers, maids, and laundresses, but excluding babysitters, in 1960:

More lived in the South than elsewhere:

About 54 percent were in the South;
Over 19 percent were in the Northeastern States;
About 18 percent were in the North Central States; and
More than 9 percent were in the West.

Negroes predominated:

Some 64 percent were Negro;
About 35 percent were white; and
Almost 1 percent were other nonwhites.

Relatively few were "live-in" workers:

About 11 percent "lived in."

This was an urban occupation:

About 71 percent were in urban areas;
Some 21 percent were in rural nonfarm areas; and
About 5 percent were in rural farm areas.

The average private household worker was about 6 years older than the typical woman in the labor force:

The median age of all employed private household workers was 46 years.
55 percent were 45 years and over;
29 percent were over 55; and
10 percent were 65 and over.

The median age for white employed private household workers was 55 years, compared with 43 years for nonwhites.

In 1967 less than 3 out of 10 private household workers were single:

28 percent were single;
56 percent were married and living with their husbands; and
56 percent were either widowed, divorced, or separated.

Legislatively, the private household worker is disadvantaged:

Workers in this occupation receive credits toward an old-age, survivors, or disability pension only if they earn a minimum of $50 from any one employer in a calendar quarter. While private household workers are eligible for coverage under the Social Security Act, they are not covered by the Federal minimum wage and hour law.

By and large, they are not afforded the protection of the major forms of labor legislation and social insurance from which most other workers benefit:

Wages: Wisconsin has a minimum wage order that covers all domestic service workers employed more than 15 hours a week by the same employer. Private household workers are covered by the statutory rate in three States: Arkansas, where the law applies only to those private household employees who work for an employer of five or more persons in a regular employment relationship; Michigan, where the minimum wage law applies only to those private household workers who work for an employer of four or more persons at any one time in a calendar year; and West Virginia, where the law applies only to those who work for an employer of at least six persons during a calendar week.

Hours: Washington's maximum hours law establishes a 60-hour week for household workers; Montana's constitution establishes an 8-hour day for all employees, except those in agriculture.

Unemployment Compensation: New York and Hawaii have limited coverage of domestic workers under their State unemployment compensation laws. In New York, coverage has been extended to all persons in personal domestic service in a private household where the householder pays $500 or more in a calendar quarter to all such employees. And in Hawaii, private household workers are covered only if they earn at least $225 from an employer in a calendar quarter.

Workmen's Compensation (as of January 1, 1969): Coverage is compulsory for all regularly employed private household workers in Puerto Rico and for all but part-time workers in Alaska. Connecticut has compulsory coverage for all private household workers employed more than 26 hours a week by one employer; California, for those working more than 52 hours a week for one employer; Ohio, for those in households where the employer has three or more such employees; and New York, for those employed a minimum of 48 hours a week by one employer in cities of 40,000 or more. Massachusetts has compulsory coverage for private household workers other than those who are seasonal or casual, or who work less than 16 hours a week. For the latter group, coverage is elective. In Michigan, while coverage is compulsory in households employing three or more workers, the employer is not liable for any such employee unless the person worked 35 hours or more a week for at least 13 weeks during the preceding 52 weeks. Coverage is elective in New Jersey, but the employer is not required to insure. In jurisdictions that do not specifically cover private household workers under workmen's compensation laws, such workers may be brought under voluntary coverage, except in Alabama, the District of Columbia, Iowa, West Virginia, and Wyoming.

NOTE: The statistical data in this report are from the U.S. Department of Commerce, Bureau of the Census; U.S. Department of Health, Education, and Welfare, Social Security Administration; and U.S. Department of Labor, Bureau of Labor Statistics.

Except as otherwise indicated, legislative data are as of June 1, 1969.

Performance Standards. Maintaining superior performance is a vital concern of major importance or high priority (9, Fry Consultants, Inc., 1966). Worker performance determines customer satisfaction, his willingness to renew the service and recommend it to others.

A reason given in support of establishing household work as a business is (10, Fry Consultants, Inc., 1966):

> "A home service business is, by necessity, a highly personalized operation. The person doing the work for the housewife must adhere to rigid performance standards because the housewife is demanding in her desires for a clean house. She could even be described as unreasonable at times so that the person performing the service must not only be well-qualified but willing to go to extra lengths to satisfy the customer."

Systematic analysis of performance requirements and results is suggested (11, Fry Consultants, Inc., 1966) in order to derive specification of training needs, specific objectives, desired content, and methods of implementation. Such an analysis is a process of working backward from an output to identify the necessary input which must be provided.

Specific objectives may be identified through task analysis of the various operations and performance elements that are involved in cleaning services. For each operation, determine:

*what are the specialized skills?

*what equipment and materials are used?

*what amount and level of knowledge are required to meet the specified standard of performance?

*what requirements are identifiable in the way of safety considerations, hazards, and special physical factors influencing safe and successful performance?

Rationale for the Study

There is still a large market for employed household workers even in these days of "labor saving" devices. Until recently it has not been necessary for a person or agency to negotiate between a homemaker (employer) and her household workers (employees). She either hired workers or did her own work, and generally she did not work outside the home. The recent trends are toward women working outside and home and/or participating in many more outside activities. The frequent geographical separation from relatives, who previously contributed to household production, also brings about a greater reliance on "employable" assistance.

Private arrangements for household help have proven to be less than satisfactory for all concerned. From the perspective of the worker, the lack of a reasonable level of pay, job security, and fringe benefits does not make this type of work attractive. The job is also viewed as demeaning because of its racial and social history. From the perspective of the homemaker, the problem of finding, training, and being able to rely on the household worker has proven very difficult. However, a large market for household care exists among the upper- and upper-middle income level households.

There are companies and firms entering the home service field. Several problems have been encountered in the various attempts. Among those is the inability to adequately cost (or, estimate the cost of) the job in terms of the standards and time required.

With the support of the U.S. Department of Health, Education, and Welfare, the Department of Home Management and Family Economics at Pur-

due University began a project in May 1969 to cost (or, estimate the cost of) the job in terms of the standards and time required. Or, the problem is: what is the standardized time for the performance of various jobs by household workers? Data are needed on task definitions and procedures as well as standards of time for performance of the task.

Objectives of the Study

The priority objectives are to:

1. Standardize elements in the selected household task of regular cleaning of the house by delimiting the variations accepted in the definition of each element as to physical properties and work (motions) performed, or, the abbreviated form of the objective

*Standardize the elements in the household task of regular (weekly) cleaning;

2. Standardize times for the performance of the elements and sum into composite standardized times for cleaning specific areas in the house, or the abbreviated form of the objective

*Standardize performance times; and

3. Validate standardized times for elements in actual situations in homes, or the abbreviated form of the objective

*Validate standardized times in actual home situations.

PROCEDURE

Objective 1. Standardize the elements in the household task of regular (weekly) cleaning.

1.0 Develop definitions for elements associated with the household task.

1.1 Within a conceptual framework, delimit items which are dusted weekly and the cleaning processes used.

1.11 Interview twenty middle- to upper-income homemakers, selected by a disproportionate stratified sampling design.

1.12 Formulate operational definitions from the homemakers' questionnaires.

Objective 2. Standardize performance times.

2.0 Have workers in a laboratory set-up perform the elements.

Time the elements of the household tasks in a laboratory situation.

Replicate each element a specified number of times by a designated number of workers performing each element.

2.1. Three environmental factors, which may cause variation and which can be used as predictors of time, were selected for the laboratory study: plain and ornate ornamentation of a room; low and high density of furniture in a room; and low and high density of accessories on furniture.

2.11 The eight task situations were simulated in the living rooms, which are identical in area and structural features, of the two Purdue University Home Management Houses.

2.12 In each task situation, the household workers dusted furniture and accessories only.

2.13 Replication 1 was conducted during 29 January 1970 through 14 February 1970, with eight household workers completing all eight task situations which were randomly assigned.

2.14 Replication 2 was conducted during 18 February 1970 through 17 March 1970, with eight household workers completing all eight task situations which were

2.14 randomly assigned.

2.15 A work estimation formula was derived for dusting a living room.

Objective 3. Validate standardized times in actual home situations.

3.0 Have nonlaboratory workers perform the tasks in selected homes.
4.0

3.0 Nonrandom Home Phase

3.1 Dusting of furniture and accessories and vacuuming floor surfaces were combined as a single operation for cleaning.

3.11 Data were obtained from twelve select households regarding cleaning of furniture, accessories, and floor surfaces.

3.12 Methods for cleaning different typical groupings of furniture, accessories, and floor coverings were formulated.

3.13 Twenty rooms were cleaned by the Project Assistants using the standardized procedures in the fall of 1970.

3.14 A work estimation formula was derived for cleaning family-living areas of the home.

4.0 Random Home Phase

4.1 Dusting of furniture and accessories and vacuuming floor surfaces were combined as a single operation for cleaning.

4.11 Quota sampling was used to determine eligibility of respondent's homes to be used.

4.111 Demographic information was obtained from the cooperating respondents: composition of the household, use of the living and/or family rooms, and characteristics of the living and/or family rooms.

4.12 Methods for cleaning different typical groupings of furniture, accessories, and floor coverings were used as formulated in 3.12 above.

4.13 During the period from December 1970 through January 1971, the seven household workers performed the cleaning tasks in the living and/or family rooms:

4.13 thirty two living rooms of which eight were replicated once; sixteen family living areas (in sixteen of the homes that had both a living and a family room); or, a total of fifty six rooms.

4.14 A work estimation formula was derived for cleaning living rooms and family rooms in the aggregate.

RESULTS

Objective 1. Standardize the elements in the household task of regular (weekly) cleaning (12, Schaurer, 1971).

From the findings of the twenty middle- to upper-income homemakers surveyed, the variation in household cleaning tasks was delimited within a conceptual framework of items dusted weekly, and cleaning processes used (Figure 1. and Figure 2.).

The basis for developing operational definitions was the number of homemakers reporting weekly dusting for types of surfaces and basic work processes. The higher frequency of the reported observations was an important criterion.

Objective 2. Standardize performance times (13, Schaurer, 1971).

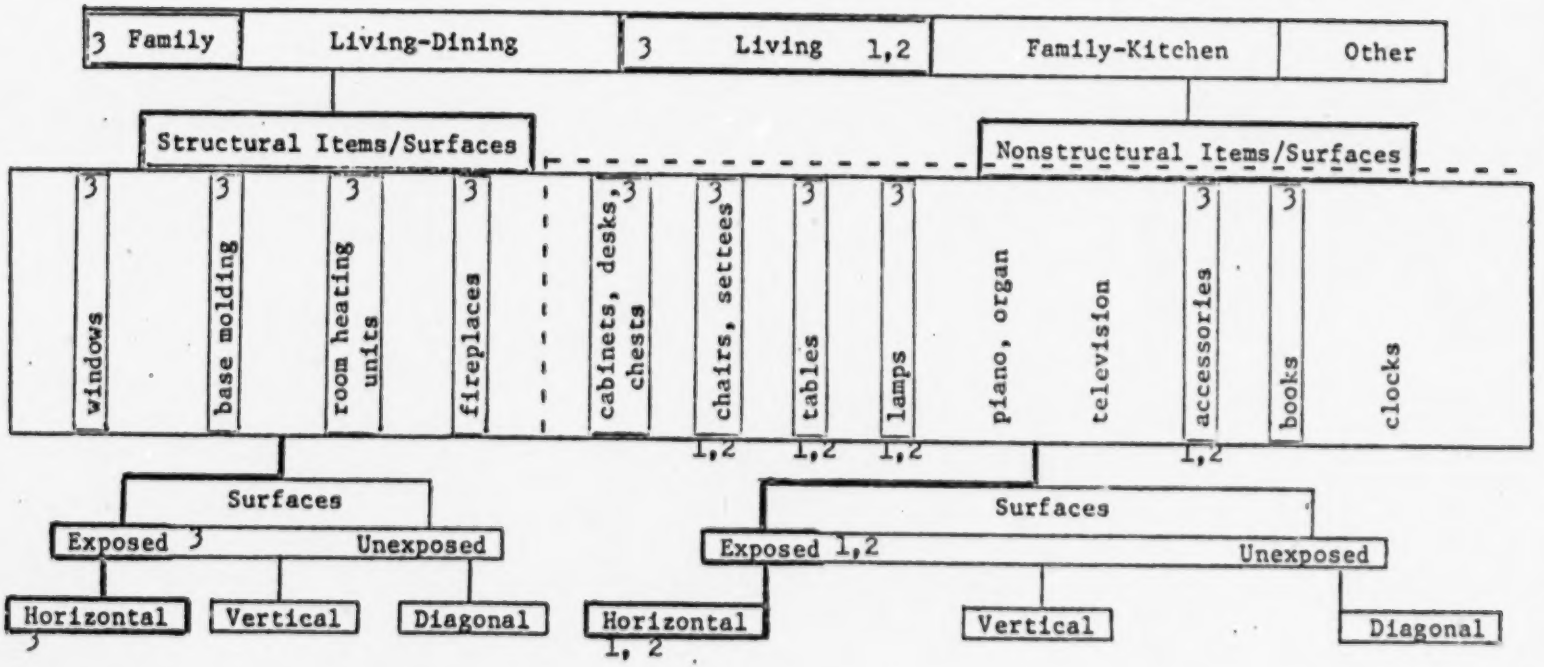
Three environmental factors, which may cause variation and which can be used as predictors of time, were selected for the laboratory study: plain and ornate ornamentation of a room; low and high density of furniture in a room; and low and high density of accessories on furniture.

Using these three environmental factors, eight combinations or task situations result (Figure 3.).

The eight task situations were simulated in the two Purdue University Home Management Houses. The two living rooms are identical in area and structural features. One living room is "plain" and the other living room is "ornate." The number and arrangement of the furniture and accessories are identical for each paired task situation (Figure 3. A and E, B and F, C and G, D and H; and Figure 4.).

In each task situation (Figure 3. A through H), the household work-

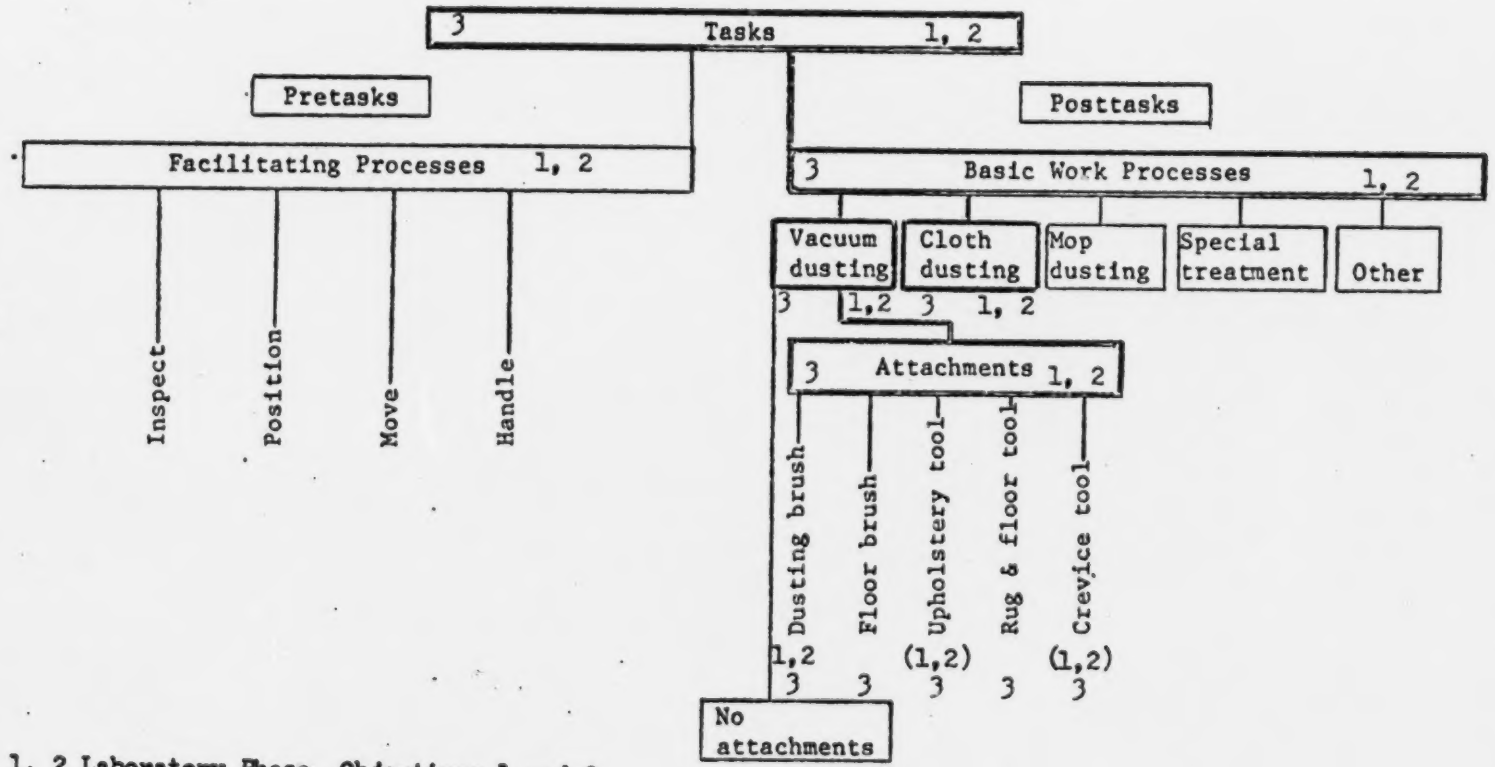
Figure 1. Conceptual Framework for Items Cleaned Weekly



1, 2 Laboratory Phase, Objectives 1 and 2

3 Home Phases, Objective 3

Figure 2. Conceptual Framework for Cleaning Processes Used



1, 2 Laboratory Phase, Objectives 1 and 2
3 Home Phases, Objective 3

Figure 3. Laboratory Task Situations

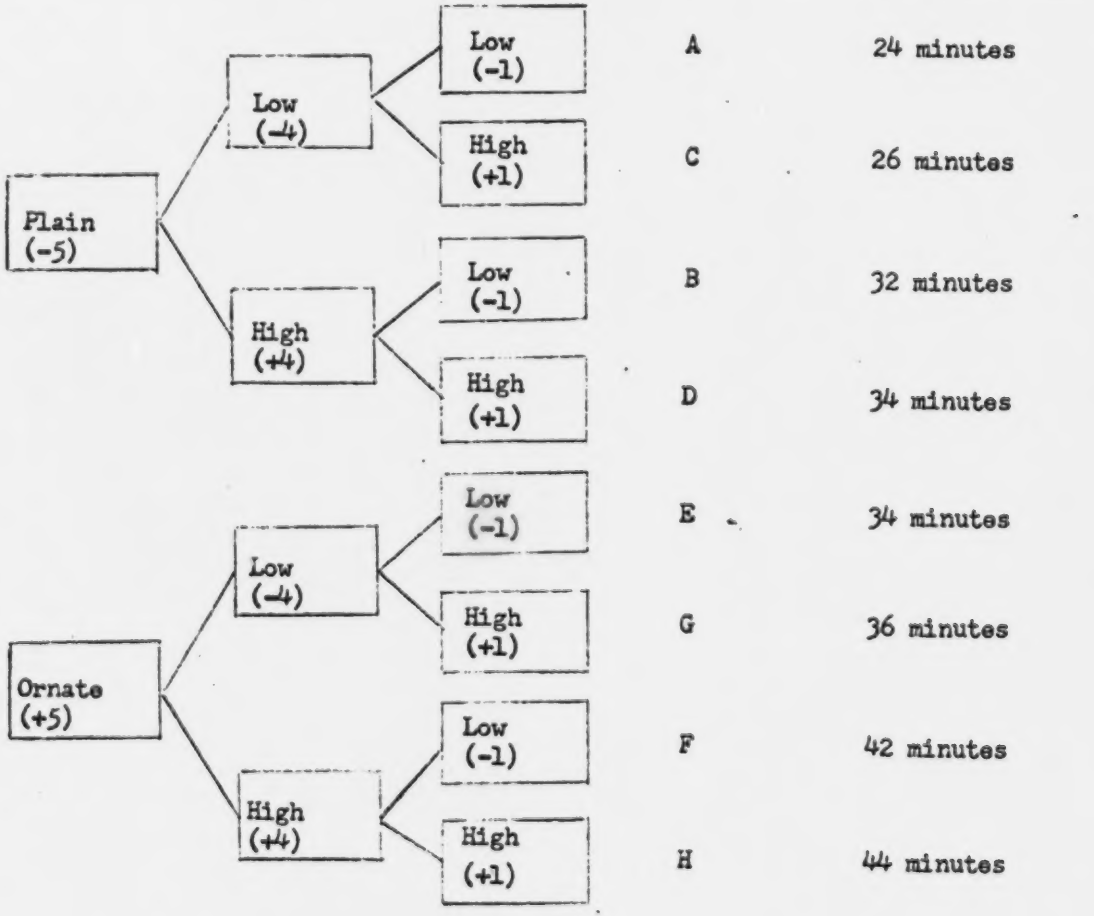
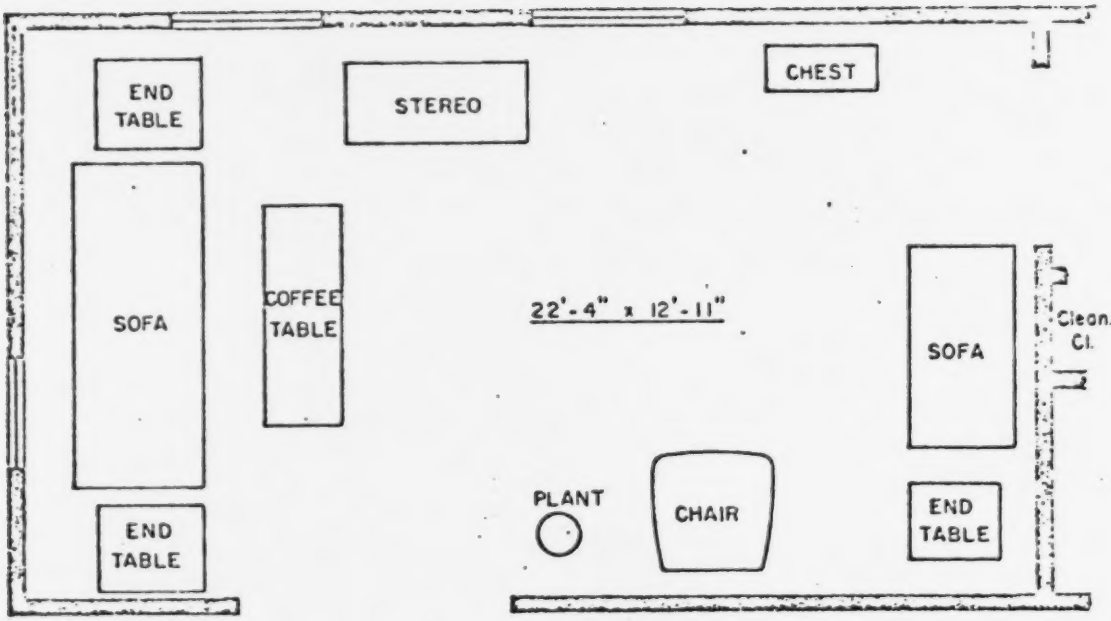
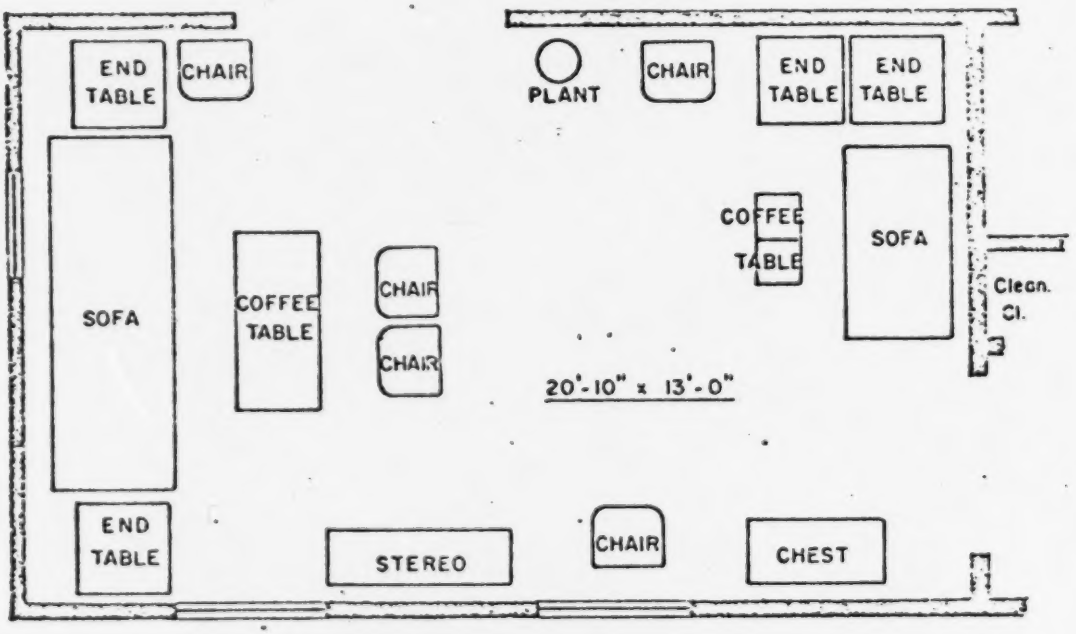


Figure 3. Laboratory Task Situations

Task Situation Code	Room Ornateness	Floor Item Density	Nonfloor Item Density	Laboratory Number
A	Plain	Low	Low	2
B	Plain	High	Low	2
C	Plain	Low	High	2
D	Plain	High	High	2
E	Ornate	Low	Low	1
F	Ornate	High	Low	1
G	Ornate	Low	High	1
H	Ornate	High	High	1



Laboratory No. 1 (E, G)



Laboratory No. 2 (B, D)

Figure 4. Floor item arrangement for low floor item density task situations (E, G) and for high floor item density task situations (B, D).

ers dusted only the furniture and accessories, and used the shoulder type of vacuum cleaner with attachments (dust brush, upholstery tool, and crevice tool), and untreated cloths.

During January and February 1970, the eight workers completed all eight task situations which were randomly assigned. Replication of the task situations was done during February and March 1970.

Cleaning Processes Used (Figure 2.)

Sixty seven percent of the household worker's cleaning time was spent on the basic work processes.

Twenty one percent of the time was spent on the facilitating processes.

Eleven percent of the time was spent on the pretasks and posttasks.

Work Estimation Formula Derivation

A factorial analysis of variance was used for the laboratory study.

The hypothesis testing conclusion is that there were statistically significant differences between the levels for these factors in the variation of time: two replications, eight workers, plain and ornate ornamentation, low and high floor item density, low and high nonfloor item density, and cleaning processes.

Statistically significant interactions were not found for the three environmental factors. Thus these factors were statistically independent and additive: plain and ornate ornamentation of a room, low and high density of furniture in a room, and low and high density of accessories on furniture.

The additive property of these environmental factors was the basis for the derivation of a work estimation formula for dusting a living

room:

Estimated time = $C + X_1 + X_2 + X_3$,

Where C = a constant, or 34 minutes average time

X_1 = the ornamentation factor: -5 minutes if plain,
+5 minutes if ornate

X_2 = the floor item density factor:
-4 minutes if low,
+4 minutes if high

X_3 = the nonfloor item density factor:
-1 minute if low,
+1 minute if high

Objective 3. Validate standardized times in actual home situations.

Nonrandom Home Phase. Dusting or vacuuming was selected as the weekly floor care standard for family-living areas, based on data obtained from the twenty middle- to upper-income homemakers (14, Schaurer, 1971).

Dusting of furniture and accessories and vacuuming floor surfaces were combined as a single operation in the family-living areas.

Methods for cleaning different typical groupings of furniture, accessories, and floor coverings were formulated.

In the fall of 1970 data were obtained from twelve select (nonrandomly selected) households regarding cleaning of furniture, accessories, and floor surfaces. Also, twenty rooms in these twelve households were cleaned by the Project Graduate Research Assistants and Laboratory Assistants using the standardized procedures previously developed.

A multiple regression model was developed to serve as a time estimator or predictor in cleaning the family-living area. The model for predicting time is :

Y (as estimated time) = S + DM + TD + AR - HE + C + EH,

With a constant of -16.95 minutes, and partial coefficients (in minutes) as follows:

S, room size: .12 x the square foot area of the room;

DM, density moved: 49.76 x moved-item density of the room;

TD, total density: 43.37 x total furniture density;

AR, accessory rating: .46 x the accessory rating;

HE, heat: -3.61 if the home has non-forced air heat;

C, carpet: 8.41 x the percentage of carpet in the room; and

EH, employed homemaker: 8.60 x the amount of time the wife works, (0 if she does not work, 1 if she works half-time, and 3 if she works full-time).

In other words, cleaning time

*increased .12 minutes x the square foot area of the room,

*increased 49.76 minutes x moved-item density of the room,

*increased 43.37 minutes x total furniture density,

*increased .46 minutes x the accessory rating,

*decreased 3.61 minutes if the home has non-forced air heat,

*increased 8.41 minutes x the percentage of carpet in the room,

*increased 8.60 minutes x the amount of time the wife works, (0 if she does not work, 1 if she works half-time, and 3 if she works full-time).

In the multiple regression analysis of the eighteen living and family areas between the dependent variable Y, total elapsed time spent in cleaning the room, and the independent variables (Table 2.), seven independent variables were associated with ninety percent of the variation in cleaning time ($R^2 = .90$).

R, which measures the combined effect of the independent variables on the dependent variable Y, total elapsed time spent in cleaning the room, was .95.

Using this multiple regression equation with seven variables, computations of the estimated times were made with the actual times required to clean the rooms (Table 4.).

Table 1. Independent Variables Used in Multiple Regression Analysis[1/] for Nonrandom Home Phase

S	room size; area in square feet
DM	density moved; total floor area occupied by furniture that was moved divided by the room size
TD	total density of floor items; total floor area occupied by furniture divided by the room size
CU	number of removable cushions; number of cushions independent of frame of sofa or chair
AR	accessory rating; based on fragileness or carefulness required in handling, such as 1 x item if nonbreakable accessory 1½ x item if accessory requires careful handling 2 x item if fragile accessory needs cautious, gentle handling 2 x item if lamps under 18 inches 2½ x item if lamps between 18 and 36 inches 3 x item if lamps over 36 inches 3 x item if very large, ornate accessory not previously listed above
LS	linear surfaces; total number of linear structural surfaces in feet that were cleaned
P	number of people in the home
E_1 & E_2	homemaker employed (used as a dummy variable in categories of not working, working half-time, working full-time)
H	hours away from home; total number of hours homemaker at gainful employment and/or volunteer work
F	fireplace; yes or no
HE	heat; forced air or non-forced air
RU	room use; number of hours room is used daily, such as less than 3 hours or more than 3 hours
U_1 & U_2	users; who used room (used as a dummy variable in categories of adults only; adults and children; adults, children, and pets)
OA	open area; that part of the floor space not covered with furniture
C	carpet; percentage of the floor covered with carpet
W_1 & W_2	ornateness of wood furniture (used as a dummy variable in categories of plain, mixed, and ornate)
EH	employed homemaker; yes or no
WU	who uses; number of persons allowed to use the room

1/ A standardized computer program BIMD2R, developed at the University of California and modified at Purdue University, was used. In the build up of the equation, one variable is added at each step. The variable added is the one which makes the greatest reduction in time variation.

Table 2. Multiple Regression Analysis for Nonrandom Home Phase

Variable	Step Six Co-efficient	Step Six F	Step Six Sig. Level	Step Seven Co-efficient	Step Seven F	Step Seven Sig. Level
S room size	.113	5.39	.01	.120	5.51	.05
DM density moved						
TD total density	56.130	2.24	---	49.762	1.58	---
CU number of removable cushions	37.140	1.36	---	43.374	1.63	---
AR accessory rating						
LS linear surfaces	.464	10.97	.005	.464	10.42	.005
P number of people						
E_1 homemaker employed						
E_2 homemaker employed						
H hours away from home						
F fireplace						
HE heat	---	---	---	- 3.606	.45	---
RU room use						
U_1 users						
U_2 users						
OA open area						
C carpet	10.225	1.65	---	8.414	.96	---
W_1 wood ornateness						
W_2 wood ornateness						
EH employed homemaker	8.767	3.03	---	8.600	2.76	---
WU who uses						
	Constant = - 17.212			Constant = - 16.95		
	R^2 = .89			R^2 = .90		
	Multiple R = .943			Multiple R = .95		
	d.f. = 6, 11			d. f. = 7, 10		

Table 3. Order of Variable Inclusion, Multiple Regression Analysis, for Nonrandom Home Phase

Order of Variable Inclusion	Variable	Step Six	Step Seven
1	S room size	S	S
2	AR accessory rating	AR	AR
3	C carpet	C	C
4	EH employed homemaker	EH	EH
5	DM density moved	DM	DM
6	TD total density	TD	TD
7	HE heat	-----	HE

Table 4. Comparison of Estimated and Actual Cleaning Time by Percent of Error for Nonrandom Home Phase[3/]

House Number	Type[1/] of Room	Estimated Cleaning Time (minutes)	Actual Cleaning Time (minutes)	Percent of Error[2/]
5	LR	98	97	.01
10	LR	60	61	.02
2	LR	44	43	.02
9	LR	79	81	.03
13	LR	90	93	.03
14	FR	27	28	.04
12	FR	44	46	.04
12	LR	44	47	.06
7	FR	50	54	.07
11	FR	37	42	.10
8	FR	63	57	.11
4	LR	70	63	.11
1	LR	64	74	.14
11	LR	48	42	.14
3	LR	64	75	.15
6	LR	61	50	.22
10	FR	22	29	.24
13	FR	48	35	.37

1/ FR represents family room and LR represents living room.

2/ Percent of Error equals the difference between estimated and actual cleaning time divided by the actual cleaning time.

3/ While data were obtained from twenty family-living areas in the twelve selected homes, two areas were omitted in analyses.

Table 5. Frequency Distribution by Percent of Error of Rooms Cleaned for Nonrandom Home Phase

Percent of Error	Number of Rooms (FR & LR)
0	0
.01 - .09	9
.10 - .19	6
.20 - .29	2
.30 and over	1
	18

Random Home Phase. Quota sampling was used to determine eligibility of respondent's homes to be used. Criteria for eligibility involved these factors:

*minimum annual income level of $15,000;

*age groups, such as age of head under 40 or over 40;

*working wives (gainful employment) or nonworking wives;

*employed household worker in the home or without any employed household worker in the home;

*geographic location, such as Lafayette or West Lafayette;

*size of family living area or living room, such as less than 250 square feet or more than 250 square feet;

*density of furnishings, such as two major classifications on a continuum of fullness to emptiness (accessories and furnishings);

*availability of both a living room and a family living area in the same home.

Demographic information was obtained from the thirty two cooperating respondents: composition of the household; use of the living and/or family rooms; and characteristics of the living and/or family rooms.

Methods for cleaning different typical groupings of furniture, accessories, and floor coverings had previously been formulated.

During the period from December 1970 through January 1971, the seven household workers performed the cleaning tasks in the living and/or family rooms (Figure 5):

*thirty two living rooms of which eight were replicated once, and

*sixteen family living areas (sixteen of the homes that had both a living and family room);

*or, a total of fifty six rooms.

Figure 5. Quota Sample Design for Selection of Respondents, Random Home Phase

House Number	Age of Head		Employed Wife		Employed Household Worker		Geographic Location		Living Room Size		Living Room Conent		Replicate Living Room	Family Room
	under 40	over 40	yes	no	yes	no	Laf.	W.Laf.	-250	+250	empty	full		
1	x			x	x		x		x		x			
2	x			x		x		x		x		x		
3	x			x		x		x	x		x			
4	x			x	x		x			x		x		
5	x		x			x		x		x	x			
6	x		x		x		x		x			x		
7	x		x		x		x			x	x			
8	x		x			x		x	x			x		
9		x		x		x	x			x		x		
10		x		x	x			x	x		x			
11		x		x	x			x		x		x		
12		x		x		x	x		x		x			
13		x	x		x			x	x			x		
14		x	x			x	x			x	x			
15		x	x			x	x		x			x		
16		x	x		x			x		x	x			
17	x			x	x			x		x	x			X
18	x			x		x	x		x			x		X
19	x			x		x	x			x	x		X	X
20	x			x	x			x	x			x	X	X
21	x		x			x	x		x		x			X
22	x		x		x			x		x		x		X
23	x		x		x			x	x		x		X	X
24	x		x			x	x			x		x	X	X
25		x		x		x		x	x			x		X
26		x		x	x		x			x	x			X
27		x		x	x		x		x			x	X	X
28		x		x		x		x		x	x		X	X
29		x	x		x		x			x		x		X
30		x	x			x		x	x		x			X
31		x	x			x		x		x		x	X	X
32		x	x		x		x		x		x		X	X

Table 6. Occupation of Head of Household, Random Home Phase

Type of Occupation	Number
Professional, Technical, and Kindred Workers	20
College professor	7
Retired college professor	1
Physician	3
Attorney	3
High school teacher	2
Dentist	1
Engineer	1
High school administrator	1
Microbiologist	1
Managers, Officials, and Proprietors	9
Real estate broker	1
Vice president of finance company	1
Production director of dairy companies	1
Business manager for car dealer	1
Factory sales manager	1
Corporation president	1
U.S. Dept. of Agr. marketing specialist	1
Owner/manager of supply company	1
University purchasing agent	1
Sales Workers	2
Insurance salesman	2
Service Workers	1
State policeman	1

Table 7. Identification by Household Worker Number and House Number of the Rooms Cleaned, Random Home Phase[1/]

Household Worker Number	House Number of the Rooms Cleaned		Number of Rooms Cleaned
	Living Rooms	Family Rooms	
1	3, 8, 12, 16, 20, 24	24	7
2	23, 24, 28, 32	25	5
3	18, 25, 28	18, 23, 28, 32	7
4	5, 19, 20, 23, 26, 27	17, 22, 26, 30	10
5	4, 6, 7, 9, 15, 19, 21, 31	5, 21	10
6	2, 10, 11, 13, 27, 31, 32	27, 31	9
7	1, 14, 17, 22, 29, 30	20, 29	8
			56

1/ The worker was timed to the nearest whole minute during the actual cleaning of the room. A supervisor evaluated the work being done (Appendix B) on a pass/fail basis. If the quality standards were not met, the room was either done over by the same or another worker, or was not used in the data analysis. The supervisor took measurements and recorded information about the room (Appendix C). The process by which the room was cleaned is described in the Training Manual with Evaluation Devices (REFERENCES, 15, page 55).

A 2^6 factorial analysis of variance[1/] was performed on total elapsed time. The experimental design factors of two levels for each of the six factors are:

*age of head of household: under 40 or over 40 years;

*wife gainfully employed: yes if employed outside of the home fifty percent or the time or more) or no;

*employed household worker: yes or no;

*geographic location: Lafayette or West Lafayette;

*size of living room: under 250 square feet or over 250 square feet;

*living room content: full or empty (density of accessories and furniture).

None of these six factors contributed significantly to cleaning time. Significant interactions were not found. This analysis provided evidence that the sample had effectively included households who do hire household workers or who would potentially hire workers.

The multiple regression model, developed in the Nonrandom Home Phase, was reformulated or revised. Several variables previously used were removed. Some variables not previously considered were added to the model for the Random Home Phase. The model for predicting time is:

1/ A standardized computer program, developed at the University of California and modified at Purdue University, was used for analysis of variance. The program is identified as BIMD2v (Biomedical Computer Programs Manual, 1 January 1964 edition).

Y (as estimated time) = I + H + S + U + CU + W_2 + DT,

With a constant of 13.66 minutes, and partial coefficients (in minutes) as follows:

I, income: 6.85 x 1 if annual income exceeds $25,000;

H, hours away from home: -.14 x the number of hours the homemaker was away from home;

S, room size: .05 x the square foot area of the room;

U, the number of upholstered items: 3.02 x the number of upholstered items;

CU, number of removable cushions: .32 x the number of removable cushions;

W_2, wood furniture ornateness: 3.21 if the wood furniture was ornate; and

DT, dexterity time score: .99 x the dexterity time score of the worker who cleaned the room.

In other words, cleaning time

*increased 6.85 minutes when family income was over $25,000,

*decreased .14 minutes x the number of hours the homemaker was away from home,

*increased .05 minutes x the square foot area of the room,

*increased 3.02 minutes x the number of upholstered items,

*increased .32 minutes x the number of removable cushions,

*increased 3.21 minutes if the wood furniture was ornate, and

*increased .99 minutes x the dexterity time score of the worker who cleaned the room.

In the multiple regression analysis of the fifty six living and family areas between the dependent variable Y, total elapsed time spent in cleaning the room, and the independent variables (Table 9 .), seven independent variables were associated with sixty three percent of the variation in cleaning time (R^2 = .63).

R, which measures the combined effect of the independent variables on the dependent variable Y, total elapsed time spent in cleaning the room, was .79 for both step seven and step eight of the analysis.

Using the multiple regression equation with seven variables, computations of the estimated times were made with the actual times required to clean the rooms (Table 11.).

Table 8. Independent Variables Used in Multiple Regression Analysis 1/ for Random Home Phase

A	age of head of household; actual age in years
I	income; 0 if $15,000 to $24,999, 1 if over $25,000
P	number of people in home; actual number
E	homemaker employed; 0 if no, 1 if half-time or more
H	hours away from home; total number of hours homemaker at gainful employment and/or volunteer work
S	room size; area in square feet
T	room type; 0 if living room, 1 if family room
FI	number of floor items; total number of pieces of furniture
TD	total density of floor items; total floor area occupied by furniture divided by room size
U	number of upholstered items; total number in room
CU	number of removable cushions; number of cushions independent of the frame of sofa or chair
AR	accessory rating; based on fragileness or carefulness required in handling, as
	1 x item if nonbreakable accessory
	1½ x item if accessory requires careful handling
	2 x item if fragile accessory needs cautious, gentle handling
	2 x item if lamps under 18 inches
	2½ x item if lamps between 18 and 36 inches
	3 x item if lamps over 36 inches
	3 x item if very large, ornate accessory not previously listed above
CA	percentage of floor covered with carpet; carpet area divided by room size
W_1 & W_2	ornateness of wood furniture; use a dummy variable with categories of plain, mixed, and ornate
U_1 & U_2	ornateness of upholstered furniture; use a dummy variable with categories of plain, mixed, and ornate
AC	number of activities; based on Walker's list, or the total number of different activities ordinarily carried out in the room cleaned
DT	dexterity time score; combined time in minutes and seconds that it takes each worker to do the three tasks during the training tests

1/ A standardized computer program BIMD2R, developed at the University of California and modified at Purdue University, was used. In the build up of the equation, one variable is added at each step. The variable added is the one which makes the greatest reduction in time variation.

Table 9. Multiple Regression Analysis for Random Home Phase

Variable		Step Seven Co-efficient	Step Seven F	Step Seven Sig. Level	Step Eight Co-efficient	Step Eight F	Step Eight Sig. Level
A	age						
I	income	6.85	5.22	.005	6.88	5.21	.005
P	number of people						
E	homemaker employed						
H	hours away from home	- .14	2.71	.05	- .13	2.32	.05
T	room type						
S	room size	.05	2.41	.05	.04	.93	---
FI	floor items						
TD	total density	---	---	---	- .20	.68	---
U	number of upholstered items	3.02	11.60	.005	3.24	12.14	.005
CU	number of removable cushions	.32	.71	---	.43	1.14	---
AR	accessory rating						
CA	carpet						
W_1	wood furniture ornateness						
W_2	wood furniture ornateness	3.21	.99	---	3.77	1.30	---
U_1	upholstered furniture ornateness						
U_2	upholstered furniture ornateness						
AC	number of activities						
DT	dexterity time score	.99	5.53	.005	.98	5.32	.005
	Constant	= 13.66			Constant	= 20.80	
	R^2	= .63			R^2	= .64	
	Multiple R	= .79			Multiple R	= .79	
	d.f.	= 7, 43			d.f.	= 8, 42	

Table 10. Order of Variable Inclusion, Multiple Regression Analysis, for Random Homo Phase

Order of Variable Inclusion	Variable		Step Seven	Step Eight
1	U	number of upholstered items	U	U
2	CU	number of removable cushions	CU	CU
3	DT	dexterity time score	DT	DT
4	I	income	I	I
5	H	hours away from home	H	H
6	S	room size	S	S
7	W_2	wood furniture ornateness	W_2	W_2
8	TD	total density	-----	TD

Table 11. Comparisons of Estimated and Actual Cleaning Time by Percent of Error for Random Home Phase[3/]

House Number	Type[1/] of Room	Estimated Cleaning Time (minutes)	Actual Cleaning Time (minutes)	Percent of Error[2/]
28	LR	50	50	0
28	FR	45	45	0
2	LR	64	65	.02
12	LR	55	54	.02
4	LR	67	64	.05
23	LR[4/]	40	38	.05
31	LR	61	64	.05
32	LR[4/]	60	63	.05
17	FR	47	49	.05
7	LR	61	65	.06
10	LR	61	65	.06
14	LR	47	50	.06
31	FR	45	48	.06
13	LR	44	41	.07
27	LR[3/,4/]	65	70	.07
11	LR	83	90	.08
23	LR	42	39	.08
25	LR	74	80	.08
20	FR	52	57	.09
3	LR	56	62	10.00
6	LR	55	50	10.00
30	FR	33	30	10.00
21	FR[3/]	18	20	10.00
9	LR	72	65	11.00
18	LR	52	59	12.00
20	LR	51	58	12.00
28	LR[4/]	52	59	12.00
1	LR	60	53	13.00
29	LR	70	62	13.00
32	LR	55	63	13.00
27	FR	50	44	13.00
24	LR[4/]	49	43	14.00
32	FR	50	59	15.00
19	LR[4/]	57	49	16.00
25	FR	52	45	16.00
17	LR	68	58	17.00
5	LR	50	42	19.00

1/ FR represents family room and LR represents living room.
2/ Percent of Error equals the difference between estimated and actual cleaning time divided by the actual cleaning time.
3/ While data were obtained from fifty six rooms in the thirty two selected homes, five rooms were omitted in analyses.
4/ Living Room was replicated in eight houses.

Table 11. Comparisons of Estimated and Actual Cleaning Time by Percent of Error for Random Home Phase[3/]

House Number	Type[1/] of Room	Estimated Cleaning Time (minutes)	Actual Cleaning Time (minutes)	Percent of Error[2/]
16	LR	57	70	19.00
24	FR	55	68	19.00
24	LR	55	46	20.00
23	FR	24	30	20.00
26	LR	62	21	22.00
30	LR	59	48	23.00
18	FR	41	53	23.00
8	LR	47	62	24.00
19	LR	51	41	24.00
31	LR[3/,4/]	60	47	28.00
22	LR	50	42	29.00
19	FR	45	35	29.00
27	LR[3/]	58	44	31.00
15	LR	68	51	33.00
22	FR	18	27	33.00
20	LR[4]	42	30	40.00
29	FR	38	25	52.00
21	LR	44	25	76.00
26	FR[3]	48	25	92.00

1/ FR represents family room and LR represents living room.
2/ Percent or Error equals the difference between estimated and actual cleaning time divided by the actual cleaning time.
3/ While data were obtained from fifty six rooms in the thirty two selected homes, five rooms were omitted in analyses.
4/ Living Room was replicated in eight houses.

-44-

Table 12. Frequency Distribution by Percent of Error of Rooms Cleaned for Random Home Phase

Percent of Error	Number of Rooms (FR & LR)
0	2
.01 - .09	17
.10 - .19	20
.20 - .29	10
.30 - .39	3
.40 - .49	1
.50 and over	3
	56

Household Workers (15, HMFE Department, 1972)

The eight household workers employed for the Laboratory Phase of the Project were also employed as housekeepers in the Women's Residence Halls of Purdue University, except one who is a housewife.

The seven household workers employed for the Random Home Phase of the Project were initially contacted through an employment advertisement in the local newspapers, recommendations from previously employed persons (the Laboratory Phase), and the University and State employment offices. Household workers employed for the Laboratory Phase of the Project were ineligible to participate in either the Nonrandom or Random Home Phase.

Interviews were conducted to determine the employability of applicants, based on criteria such as:

*high school graduate or less,

*availability,

*pay rate,

*physical examination, and

*interest in terms of being involved in a research project.

Pretraining of the household workers included assessment activities, such as:

*reading competency (ability to read and understand manufacturers' instructions for use and care of equipment),

*scales which measure attitudes toward homemaking activities and vocations, and

*devices to ascertain levels of physical dexterity (requisite in the performance of the actual household cleaning process).

Training involved instructor (supervisor) demonstrations and house-

hold worker rehearsals (dry runs) of mock-ups (simulations) of the task situations:

*dusting furniture and accessories in the Laboratory Phase, and

*dusting furniture and accessories, and floor surfaces in both the Nonrandom and Random Home Phases.

Workers were trained to perform the standardized cleaning activities. Also, they were acclimated to timing of their performances during the training period. The household workers demonstrated the standardized cleaning procedures and were evaluated by the Project supervisors before any data collection in either the Laboratory or Home Phases.

Post training encompassed an assessment of workers' attitudes, particularly regarding the occupation of household cleaning. Also, a critique of the training program was conducted to obtain recommendations, suggestions, and criticisms. This critique was fundamental to the development of the training manual for the supervisor's use: especially in instructing household workers in procedures and skills in dusting and vacuuming.

CONCLUSIONS

The basic purpose of this project was to determine the standardized time for the performance of various household jobs by a household worker. Data on task definitions, procedures, and standards of time for the performance of the task could be used in pricing household services. Thus, the thrust of the research effort has been in terms of developing techniques for determining standardized times and the component parts. Or, the development of methodology is viewed as a bench mark accomplishment.

While the scope of household jobs performed by the household worker is of some magnitude, delimitation has been a priority concern at each stage of the investigation. While only a few of the many household jobs have been incorporated into this project, the foundation has been established for expanding such basic methodology to other types of household jobs.

Objective 1. Standardize the elements in the household task of regular (weekly) cleaning.

From the findings of a survey of twenty middle- to upper-income homemakers, the variation in household cleaning tasks was delimited within a conceptual framework ot items dusted weekly, and the cleaning processes used.

Three environmental factors, which cause variation and can be used as predictors of time, were identified.

Objective 2. Standardize performance times.

Eight household workers completed the task situations which were derived from the environmental factors. In each task situation, the worker dusted furniture and accessories only. A work estimation formula was derived from the data obtained.

Objective 3. Validate standardized times in actual home situations.

Nonrandom Home Phase. Progressing from the initial Laboratory Phase, the task situation was extended to dusting furniture and accessories, and vacuuming floor surfaces. Actual homes were used in the data collection: family-living areas of staff members' homes. The Project Research Assistants, working as teams, performed the household cleaning tasks and collected the data.

This phase was a mini-prototype, or an intermediary link between the Laboratory Phase and the Random Home Phase. Methods for cleaning different groupings of furniture, accessories, and floor coverings were formulated and standardized.

A multiple regression model was developed to serve as a time estimator or predictor in cleaning the family-living areas. While restrictions are inherent in the utility of such a regression model (selected homes with family-living areas within a narrow range of variation, small number of family-living areas cleaned, and Research Project Assistants as the household workers), it was demonstrated that cleaning time could be successfully estimated.

Also, from the regression model leads were obtained as to the independent variables which are important in estimating or predicting variation in cleaning time:

*the square foot area of the room,
*the moved-item density of the room,
*the total furniture density,
*the accessory rating,
*the type of heating in the home,
*the percentage of carpet in the room, and
*the employment status of the homemaker.

Random Home Phase. This phase was the sophistication of methodology established in conjunction with statistical analyses:

*quota sampling design to obtain eligible respondent homes in which to perform the cleaning task,

*seven household workers, not previously associated with the Project, to clean the living and/or family rooms,

*standardized method for cleaning different groupings of furniture, accessories, and floor surfaces: to dust furniture and accessories, and to vacuum floor surfaces.

A multiple regression model was developed to serve as a time estimator or predictor. Independent variables identified in the Nonrandom Home Phase multiple regression model were carefully reviewed, revised, or eliminated.

As ascertained from the Random Home Phase multiple regression model, these variables are important in estimating or predicting variation in cleaning time:

*the amount of annual income,
*the number of hours the homemaker was away from home,
*the square foot area of the room,
*the number of upholstered items,
*the number of removable cushions,
*the wood furniture ornateness, and
*the dexterity time score of the worker who cleaned the room.

RECOMMENDATIONS

Results of this project could be utilized in terms of:

*developing a technique for standardization of definitions and times associated with other household jobs,

*occupational training of household workers, and

*expanding employment opportunities, and facilitating the provision of desired household cleaning services to those willing to pay for such services.

A priority recommendation for further basic research is to:

*delimit items which are wet cleaned weekly in the family or living room and in other areas of the home; and the cleaning processes used,

*use methodology to standardize wet cleaning process performance times,

*derive work estimation formulas, and

*validate standardized times.

A priority recommendation as an educational innovation is to:

*develop career ladders and lattices based on the core of skills in household employment.

While occupational training of household workers was not initially incorporated into the research proposal, in reality such training became of paramount importance in the standardization of cleaning procedures. Thus, occupation training of household workers could be given equivalent priority with basic research to standardize other household jobs.

A priority recommendation as an employment development is to:

*establish procedures for team cleaning in the occupation of household employment.

A household employment business is advanced as a means of facilitating employers (households desiring services) and employees (household workers). Employment opportunities may be expanded with combinations of

teams in this occupation, either as self-employed or affiliated with a household employment business.

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1 Florence T. Hall and Marguerite P. Schroeder. "Effects of Family and Housing Characteristics on Time Spent on Household Tasks," Journal of Home Economics, Vol. 62, No. 1, Jan 1970, pps. 28-9.

2 Ethlyn Christensen. "Household Employment: Restructuring the Occupation," Issues in Industrial Society, Vol. 2, No. 1, 1971, p. 53, citing Report of a Consultation on the Status of Household Employment (held at Chicago Circle Campus, University of Illinois, 20 May 1967. Washington, D. C.: G.P.O, 1968.

Also, see Wall Street Journal, 6 July 1971, p. 1:

> "The Department of Agriculture awards a one year, $19,520 grant to Cornell University for research to determine the contribution of housework to the total U.S. economy."

3 Elizabeth Duncan Koontz. "New Horizons: Household Employment and the Home-Related Arts," Address at the Conference on Consumer and Homemaking Education, Anaheim, California, 9 Nov 1970, p. 4.

Also, see "Recent Activity in Household Employment and the Home Related Arts," Women's Bureau, Employment Standards Administration, U.S. Department of Labor, Washington, D. C., May 1971 (WB 71-138), p.1:

> "The American Home Economics Association under a contract with the Manpower Administration of the U.S. Department of Labor, is researching and developing a number of career ladders and lattices based on the core of skills in household employment and the home-related arts. Progress on this contract was reviewed by a small consultative group in march. A wider audience will explore the feasibility of six career models in Washington, D. C., on 24-5 May 1971. This consultation, sponsored by the American Home Economics Association in conjunction with the Women's Bureau of the U.S. Department of Labor, will involve representatives of business and industry intimately connected with the present range of jobs and services in the proposed occupational ladders and lattices. These representatives will be interacting with training and curriculum specialists, manpower utilization and training specialists, vocational educators, directors of pilot training projects, and home economists."

4 Laurence P. Feldman. "Societal Adaptation: A New Challenge for Marketing," Journal of Marketing, Vol. 35, No. 3, July 1971, p. 60, citing Herman P. Miller. "Is Overpopulation Really the Problem?" Conference Board Record, Vol. VII, May 1970, at pps. 21-2.

5 Laurence P. Feldman. "Societal Adaptation: A New Challenge for Marketing," Journal of Marketing, Vol. 35, No. 3, July 1971, p. 59.

6 Koontz, op. cit., p. 2.

7 Ethlyn Christensen. "Household Employment: Restructuring the Occupation," Issues in Industrial Society, Vol. 2, No. 1, 1971, pps. 48-9.

Also, see:

1969 Handbook on Women Workers, Wage and Labor Standards Administration, U.S. Department of Labor. Washington, D. C.: G.P.O., Women's Bureau Bulletin 294, 1969.

8 Koontz, op. cit., p. 3.

Also, see:

Berenice Mallory. "Auxiliary Workers in Today's Society," Journal of Home Economics, Vol. 63, No. 5, May 1971, p. 328:

> "In 1965 a nonprofit organization, the National Committee on Household Employment was established by a group of volunteer organizations. The Committee serves as a clearinghouse and coordinator for private organizations interested in the field of household employment. Since 1968 the National Committee on Household Employment has had a contract with the U.S. Department of Labor and the U.S. Department of Health, Education, and Welfare to develop pilot training programs 'to demonstrate various methods and techniques for recruiting, training, counseling, and placing household workers.' "

9 Fry Consultants, Inc. A Job Development Program in the Home and Apartment Maintenance Industry--a Business Opportunity, Institute for Applied Technology, National Bureau of Standards, U.S. Department of Commerce. Springfield, Virginia: Clearinghouse for Federal Scientific and Technical Information, 22151, PB 174 056, Nov 1966, pps. 44, 39.

10 Fry Consultants, Inc., op. cit., p. 69.

11 Fry Consultants, Inc., op. cit., p. 59.

12 Dorothy L. Schaurer. "Work Time Estimation for Cleaning Tasks in Household Employment," unpublished Ph. D. thesis, Purdue University, 1971, Chapter III.

13 Schaurer, op. cit., Chapter IV.

14 Schaurer, op. cit., Chapter IV.

15 Home Management and Family Economics Department, School of Home Economics, Purdue University, Lafayette, Indiana 47907.

In conjunction with the Project, training materials were developed to be used in household cleaning employment programs:

*16 mm color films with tape cassettes and/or written scripts
"Care of an Upright Vacuum Cleaner," four minutes;
"Vacuuming an End Table with Accessories," four minutes;
"Vacuuming an Upholstered Chair," four minutes; and
"Standardized Procedure for Cleaning the Living Area," twenty minutes, and ten minutes (an abbreviated version).

*LAPS (Learning Activity Packages)
"How Do I Use and Care for an Upright Vacuum Cleaner?"
"Make Your Own Easy Street through Work Simplification," and
"What is a Good Dust Cloth? How Do I Use One?"

*Training Manual with Evaluation Devices for training household workers in Cleaning the Family-Living Areas

Please contact the Home Management and Family Economics Department regarding the availability of these training materials.

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Appendix A. Homemaker's Questionnaire

_____Home Number
_____Date

1. What is your husband's occupation?

2. For whom is your husband employed?

3. What is his educational level?
   _____a. some high school
   _____b. high school graduate
   _____c. some college or advanced training
   _____d. bachelor's degree, or other 4 year program
   _____e. advanced college work with no additional degree
   _____f. one or more advanced degrees

4. What is your husband's age?

5. According to your family income, you would be in which of these income groups?
   _____a. below $10,000
   _____b. $10,000 to $14,999
   _____c. $15,000 to $19,999
   _____d. $20,000 to $24,999
   _____e. over $25,000

6. How many years have you been married?

7. How many children do you have?

8. How many children live at home?

9. What is the age of the oldest child living at home?

10. What is the age of the youngest child living at home?

11. How many family house pets do you have?
   _____a. cats
   _____b. dogs
   _____c. birds
   _____d. others, please list:

12. Are you (homemaker) employed outside the home?
   _____a. full time
   _____b. part time
   _____c. none

13. If you (homemaker) are employed, what type of job do you have?

14. How many hours weekly on the average do you spend in volunteer, educational, or civic activities that require your absence from the home?

Appendix A. (cont'd.)

15. Do you entertain as a result of your husband's business?
_____yes
_____no

If yes, indicate how many hours monthly are spent on the average in preparation for and carrying out of such activities?
_____number of hours monthly

16. Other than for business reasons, how many hours per month do you spend on the average preparing for and carrying out entertainment of guests in your home? Count family members vists as guest visits.
_____number of hours monthly

17. What is your (homemaker) educational level?
_____a. some high school
_____b. high school graduate
_____c. some college or advanced training
_____d. bachelor's degree, or other 4 year program
_____e. advanced college work with no additional degree
_____f. one or more advanced degrees

18. What is your (homemaker) age?

19. For what reason(s) do you hire, or would you hire, a household worker?
_____a. health
_____b. out of home obligations other than a paid job leave too little time
_____c. work outside the home full or part time
_____d. family responsibilities make worker needed
_____e. difficulty of work
_____f. necessity of entertaining or having other guests frequently
_____g. dislike of housework
_____h. preference for other activities

20. Have you employed a household worker within the last five years, or do you now employ one?
_____a. regularly
_____b. irregularly
_____c. none

21. If you do not presently employ a household worker, would you like to have one?

22. If you do not presently employ a household worker, is one reason that you have found it hard to find one?

Comments:

Appendix A. (cont'd.)

23. If you employ a household worker, how often does she come?
    _____a. weekly
    _____b. more than once a month, but not every week
    _____c. infrequently

24. For how many hours each day?

25. What is the pay per hour that you give the worker?

. . . . . .

In regard to the room that we are cleaning
_____type of room, and _____approximate number of hours used daily

Who uses the room?
_____adults only _____adults and children _____adults, children, and pets

For each of the following activities, give the approximate average number of hours weekly. If any activity is not done, leave the space blank.

_____eat meals
_____serve snacks or refreshments
_____entertain guests
_____have parties
_____dance
_____read
_____study
_____record or bookkeeping
_____write letters
_____type
_____listen to ratio
_____watch television
_____play records
_____play piano
_____play other musical instruments

_____others: please list

_____play table games
_____play board games
_____play games involving movement of people
_____play with toys
_____do miscellaneous hobbies (collections, model-building)
_____hand sew or embroidery
_____use sewing machine
_____iron
_____rest or take naps
_____guests sleep overnight
_____family sleep(s) overnight

Appendix B. Quality Standards for Room Evaluation

1. All structural surfaces will be cacuumed dustfree.
   _____baseboards
   _____window sills, frames, tops of double hung windows
   _____wainscot ledges
   _____door molding
   _____louvered doors
   _____fireplace

2. All upholstered items will be vacuumed thoroughly.
   _____with pile
   _____all exposed surfaces except back if not moved
   _____crevices
   _____cushions, also reversed and straightened

3. All pieces of wood furniture will be vacuumed dustfree.
   _____with grain
   _____all exposed surfaces
   _____use dust cloth if highly polished or at homemaker's request

4. All accessories will be vacuumed dustfree and returned to original place or in functional arrangement.
   _____lamps, all surfaces of shades and bases vacuumed; seams and cords inconspicuous; shades in place
   _____pictures, all frames vacuumed; face vacuumed if covered with glass
   _____books and magazines, tops, sides, and ends cleaned; treated as a unit
   _____other accessories, all exposed surfaces vacuumed
   _____dust cloth will be used on small, fragile items or as requested

5. Carpet area will be cleaned according to the National Carpet Institute Standards.
   _____all exposed area vacuumed 7 times; move furniture with pile
   _____with appropriate setting for rug type
   _____vacuum trails parallel, if they show

6. Hard floor surfaces will be vacuumed dustfree
   _____go over once, overlapping in next stroke

Appendix C. Procedure for Data Collection
Reminders for Person in Charge

Bring with you to the home:
- .vacuum cleaner with wand and hose
- .tote tray with
  - ( ) dust cloths
  - ( ) measuring equipment
  - ( ) extra bags, belts, and brushes
  - ( ) "use and care" booklet
  - ( ) stop watch
  - ( ) electrical tape
  - ( ) apron with crevice tool, upholstery tool, dust brush, floor brush
  - ( ) clipboard with forms and information: evaluation, questionnaire, procedure

_____Date
_____Home Number
_____Room Type
_____Total Elapsed Time
_____starting time
_____ending time
_____idle time

Procedure: check as each is completed

_____check with homemaker regarding use of dust cloth
_____measure room
_____sketch room on attached sheet
_____place windows and doors on the plan, making sure their sizes and relative positions from each other and/or corners are given
_____if carpet is not wall-to-wall, measure and show its position in relation to the walls
_____measure and sketch in all furniture; record positions of furniture from wall, window, or door rather than other furniture
_____label all furniture; use code if desired
_____circle furniture not moved
_____fill in accessory table below
- _____number of items nonbreakable
- _____number of items requiring only careful handling
- _____number of items fragile, requiring gentle handling
- _____number of lamps under 18"
- _____number of lamps between 18" and 36"
- _____number of lamps over 36"
- _____number of very ornate, delicate, large and hard to clean accessories (not listed elsewhere)

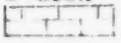
_____list picture sizes below:
with glass without glass

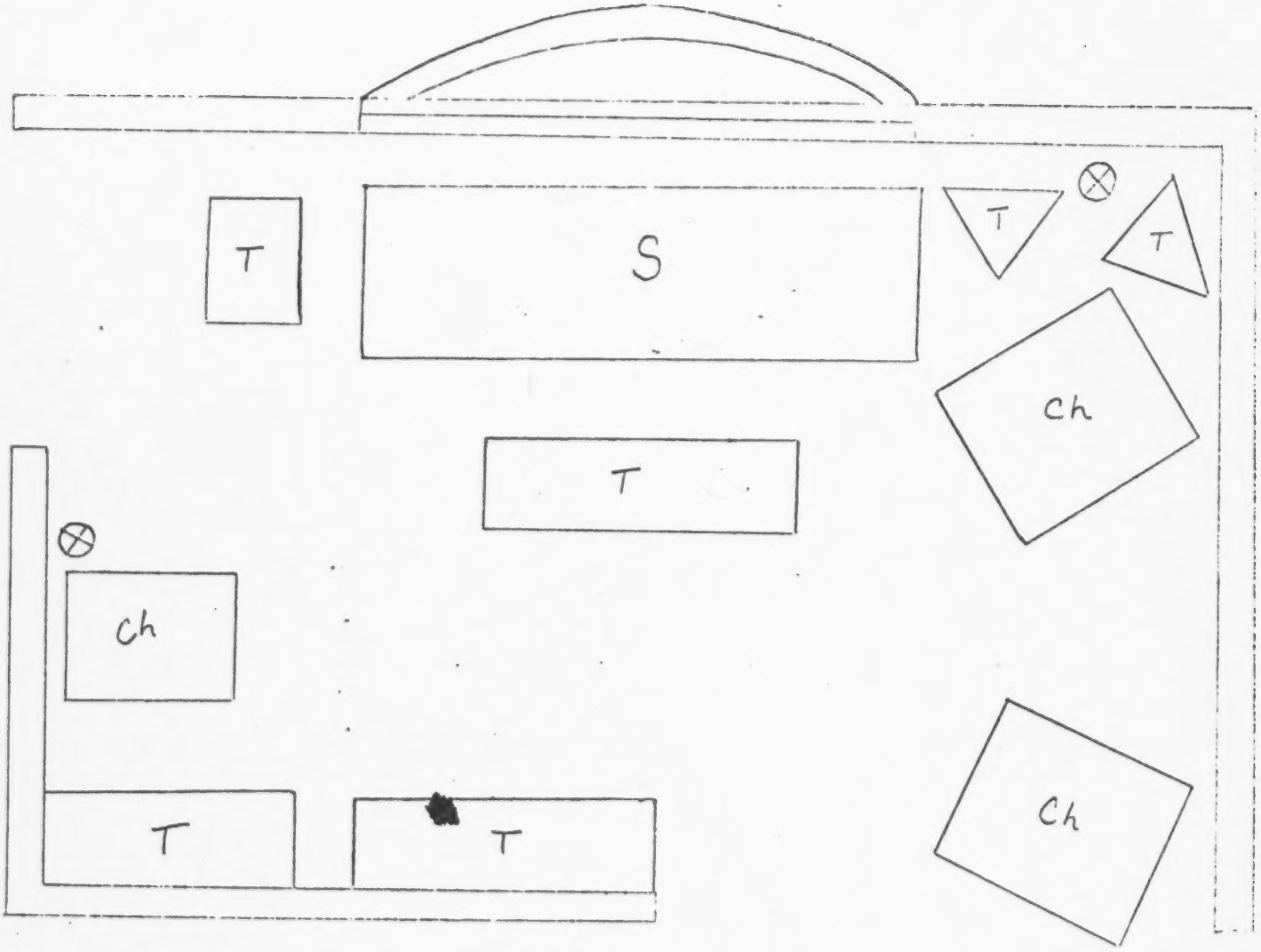
_____how many upholstered items are there
_____how many removable cushions are there
_____miscellaneous
- _____mark direction of door swing
- _____show fireplace width, depth, and height
- _____what is the ornateness of upholstered items
  - . ( ) ornate, ( ) mixed, or ( ) plain
- _____what is the ornateness of wood items
  - ( ) ornate, ( ) mixed, or ( ) plain

Appendix C. (cont'd.)

Room Sketch

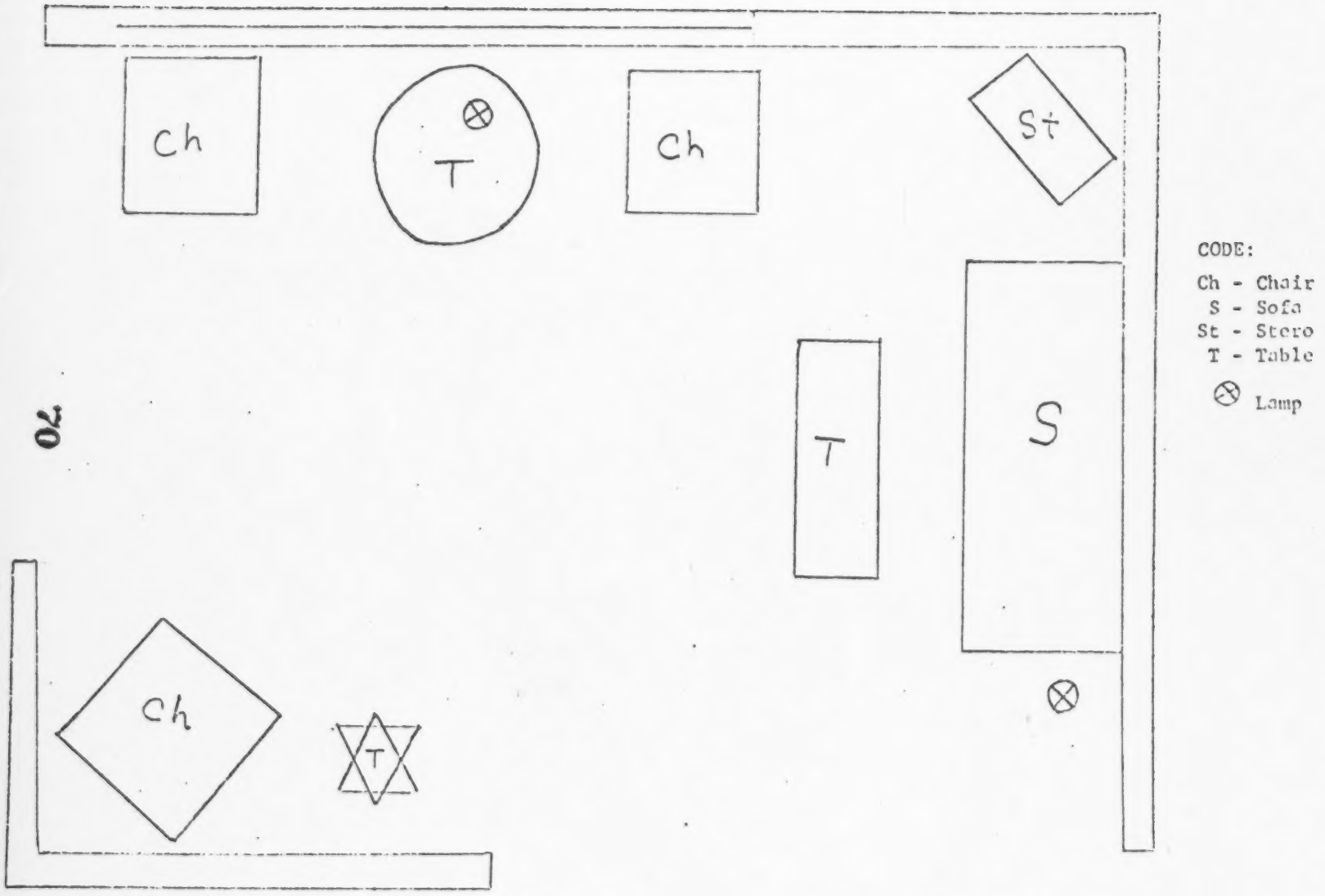
Furniture Code

B-bench
BC-bookcase
Buf-buffet
Ch-chair
C-chest
D-desk
 -fireplace
L-lamps
/// \\\-louvered doors
M-magazine rack
O-organ
Ot-ottomon
Pi-piano
P-plant
S-sofa
St-stereo
T-table
TV-television
TB-toybox
W-wastebasket



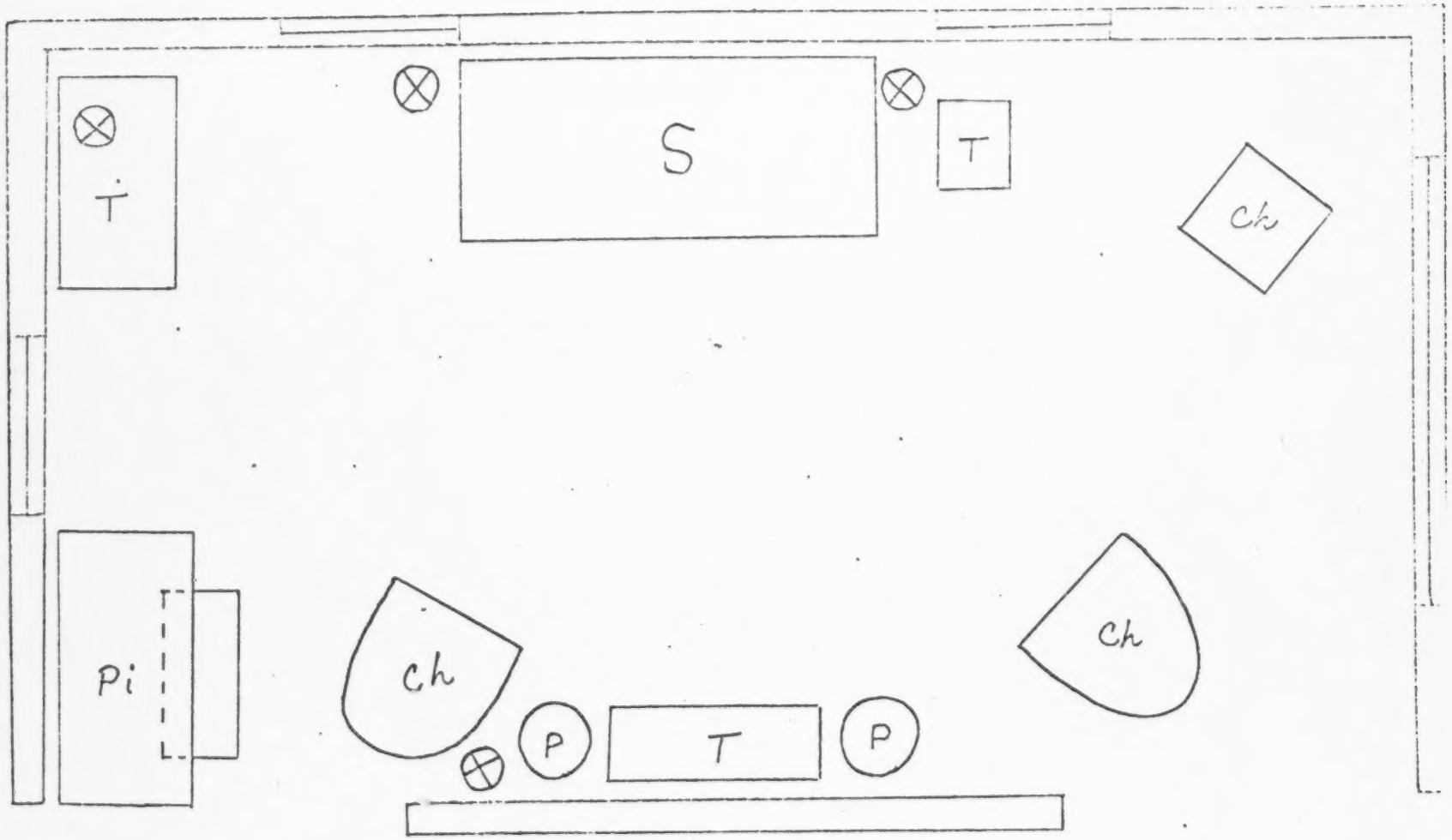
Living Room

House No. 6



Living Room

House No. 10

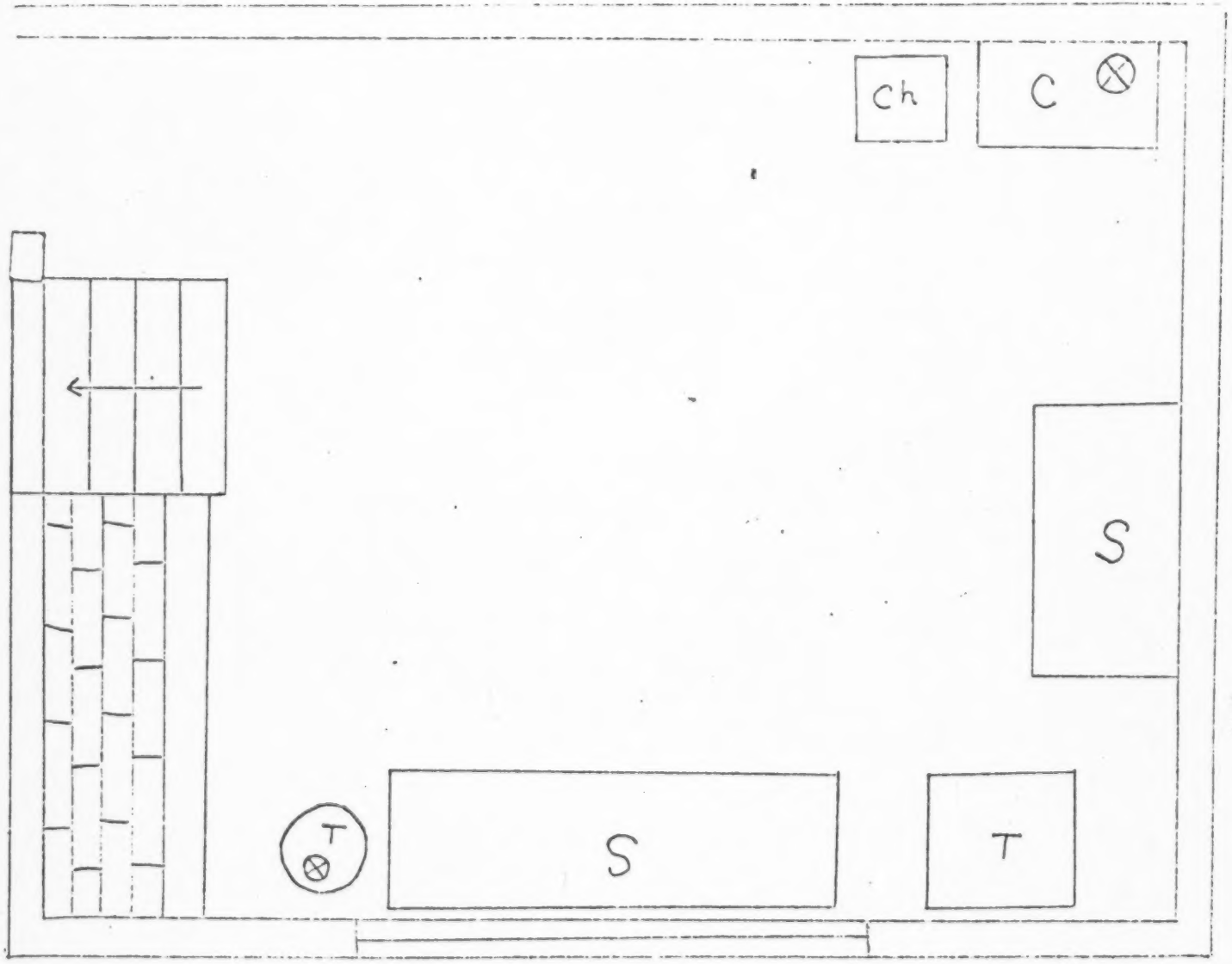


CODE:

Ch - Chair
P - Plant
Pi - Piano
S - Sofa
T - Table
⊗ Lamp

Living Room

House No. 16



CODE:

C - Chest
Ch - Chair
S - Sofa
T - Table
⊗ Lamp

Fireplace

Living Room

House No. 28

Appendix D.

Project Periscope with Recommendations for Further Study

Objective	Methods	Findings	Recommendations
1. Standardize the elements in the household task of regular (weekly) cleaning.	Develop definitions for elements associated with the household task.	Within a conceptual framework, items which are dusted weekly and the cleaning processes used in the living room were delimited.	WITHIN THE FAMILY OR LIVING ROOM, DELIMIT OTHER STRUCTURAL AND NONSTRUCTURAL ITEMS WHICH ARE DUSTED WEEKLY AND THE CLEANING PROCESSES USED. WITHIN THE FAMILY OR LIVING ROOM, DELIMIT ITEMS WHICH ARE WET CLEANED WEEKLY. WITHIN OTHER AREAS OF THE HOME, DELIMIT STRUCTURAL AND NONSTRUCTURAL ITEMS WHICH ARE DUSTED WEEKLY; AND ITEMS WHICH ARE WET CLEANED WEEKLY; AND THE CLEANING PROCESSES USED.
2. Standardize performance times.	Have workers in a laboratory set-up perform the elements. Time the elements of the household tasks in a laboratory situation. Replicate each element a specified number of times by a designated number of workers	Three environmental factors, selected for the initial Laboratory study, can be used as predictors of time: *plain and ornate ornamentation of a room, *low and high density of furniture in a room, and *low and high density of accessories on furniture.	USE METHODOLOGY TO STANDARDIZE PERFORMANCE TIMES: *WITHIN THE FAMILY OR LIVING ROOMS AS OTHER STRUCTURAL AND NONSTRUCTURAL ITEMS WHICH ARE DUSTED WEEKLY;AND ITEMS WHICH ARE WET CLEANED WEEKLY; *WITHIN OTHER AREAS OF THE HOME AS STRUCTURAL AND NONSTRUCTURAL ITEMS WHICH ARE DUSTED WEEKLY; AND ITEMS

Appendix D. (cont'd.)
Project Periscope with Recommendations for Further Study

Objective	Methods	Findings	Recommendations
2. (cont'd.)	performing each element.		WHICH ARE WET CLEANED WEEKLY.
		A work estimation formula was derived for dusting furniture and accessories in the living room (task situations).	DERIVE WORK ESTIMATION FORMULAS FOR: *OTHER STRUCTURAL AND NONSTRUCTURAL ITEMS WITHIN THE FAMILY OR LIVING ROOMS, OR WITHIN OTHER AREAS OF THE HOME. *ITEMS WHICH ARE DUSTED, OR ITEMS WHICH ARE WET CLEANED.
3. Validate standardized times in actual home situations.	Have nonlaboratory workers perform the tasks in selected homes.	Nonrandom Home Phase Dusting of furniture and accessories and vacuuming floor surfaces were combined as a single operation for cleaning the family-living area.	USE METHODOLOGY TO VALIDATE STANDARDIZED TIMES: *WITHIN THE FAMILY-LIVING ROOMS, AND *WITHIN OTHER AREAS OF THE HOME.
		A multiple regression model was developed to serve as a time estimator or predictor in dusting furniture and accessories and vacuuming floor surfaces for the family-living area.	DERIVE MULTIPLE REGRESSION MODELS: *WITHIN THE FAMILY-LIVING ROCMS, AND *WITHIN OTHER AREAS OF THE HOME.

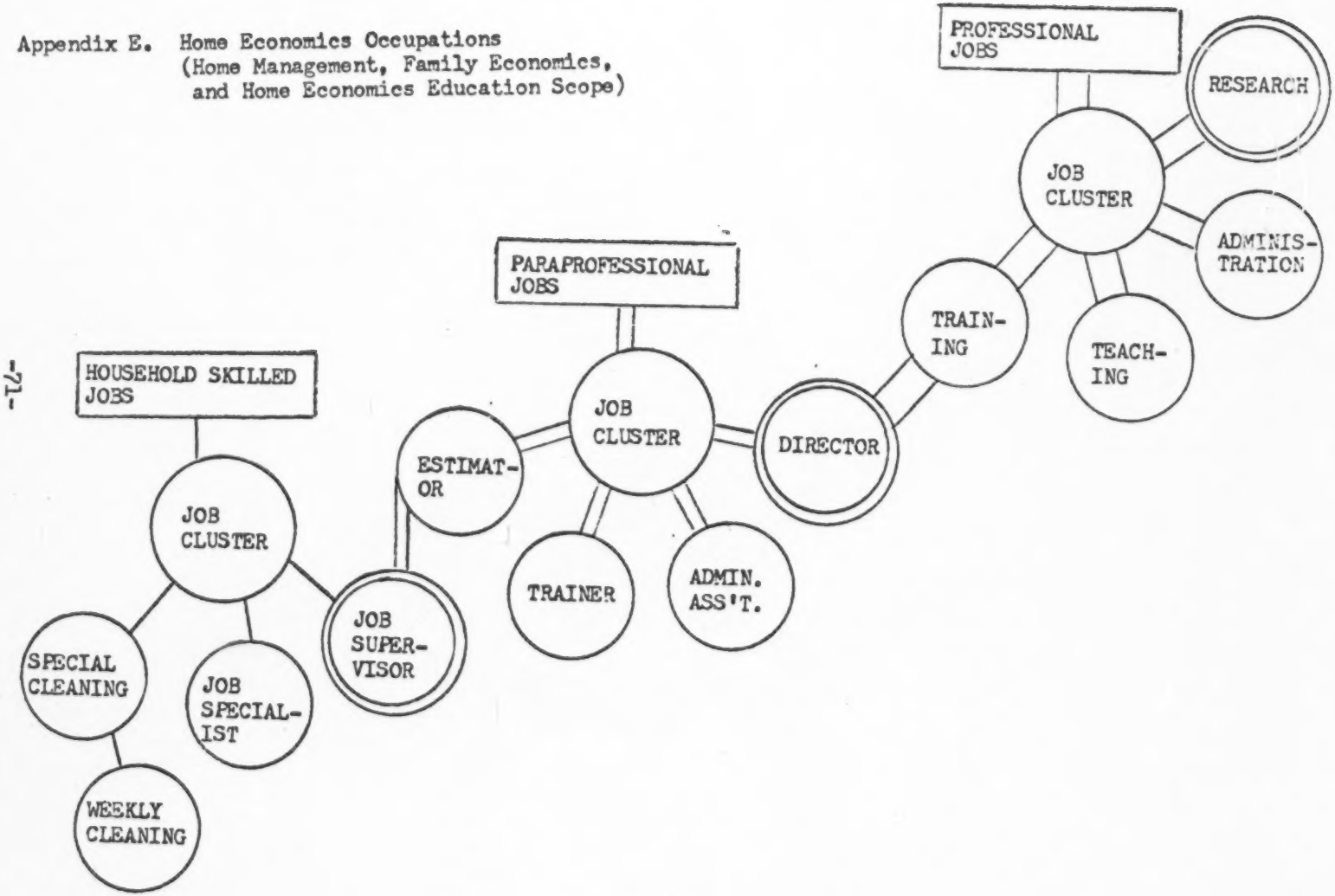
Appendix D. (cont'd.)
Project Periscope with Recommendations for Further Study

Objective	Methods	Findings	Recommendations
3. (cont'd.)		Random Home Phase Dusting of furniture and accessories and vacuuming floor surfaces were combined as a single operation for cleaning family and living rooms.	USE METHODOLOGY TO VALIDATE STANDARDIZED TIMES: *WITHIN THE FAMILY AND LIVING ROOMS, AND *WITHIN OTHER AREAS OF THE HOME.
		A multiple regression model was developed to serve as a time estimator or predictor in dusting furniture and accessories and vacuuming floor surfaces for family and living rooms in the aggregate.	DERIVE MULTIPLE REGRESSION MODELS: *WITHIN THE FAMILY AND LIVING ROOMS, AND *WITHIN OTHER AREAS OF THE HOME. VALIDATE MULTIPLE REGRESSION MODELS BY HOME SERVICE BUSINESSES AS SERVICE MASTER, SEARS', HOLIDAY INNS. REPLICATE METHODOLOGY AND VALIDATE MULTIPLE REGRESSION MODELS BY A RESEARCH PROJECT WHICH INVOLVED COOPERATING STATES AS AGRICULTURAL EXPERIMENT STATION.

Appendix D. (cont'd.)
Project Periscope with Recommendations for Further Study

Objective	Methods	Findings	Recommendations
3. (cont'd.)		Random Home Phase (cont'd.)	USE OTHER TYPES AND/OR COMBINATIONS OF EQUIPMENT AS UPRIGHT, CANNISTER, PIXY, COMMERCIAL VACUUM CLEANERS; SOME COMBINATION OF VACUUM CLEANERS AND/OR ATTACHMENTS. ESTABLISH PROCEDURES FOR TEAM CLEANING AS FEMALES; MALES; FEMALE AND MALE. DEVELOP CAREER LADDERS AND LATTICES BASED ON THE CORE OF SKILLS IN HOUSEHOLD EMPLOYMENT.

Appendix E. Home Economics Occupations
(Home Management, Family Economics,
and Home Economics Education Scope)



Appendix E. (cont'd.)

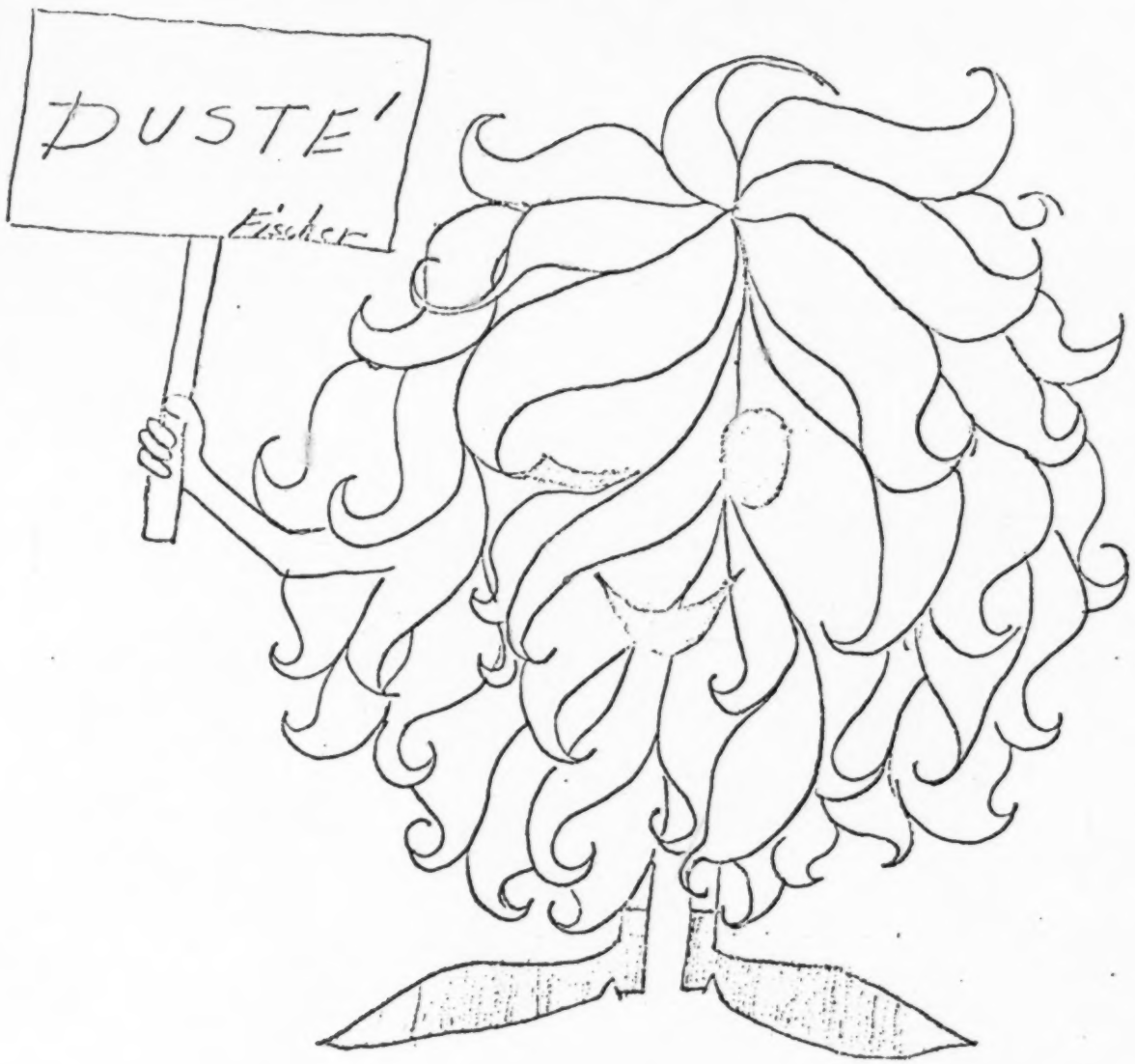
JOB TITLE	ROLES AND RESPONSIBILITIES	TRAINING AND/OR EXPERIENCES
HOUSEHOLD SKILLED JOBS		
Weekly Cleaning	Dry and wet cleaning of all rooms. Use and care of vacuum cleaners.	No entry requirements. Training in dry and wet sanitary cleaning methods; use and care of equipment; motion and time economy. Possession of desirable personal qualities.
Special Cleaning	Nonweekly cleaning, such as defrosting refrigerator, cleaning oven; washing walls, ceilings; stripping wax; shampooing carpet.	SAME as Weekly Cleaning, AND Training in special cleaning methods; use of equipment, supplies. Training in principles of sanitation and disinfection.
Job Specialist	Supervise work. Check quality. Perform any or all skills associated with Weekly Cleaning and/or Special Cleaning as needed. Member of team to determine standards of work.	SAME as Weekly Cleaning, Special Cleaning, AND Work experience in Weekly Cleaning and Special Cleaning. Training in quality control. Additional training in home management.
Job Supervisor	Assist in training new workers at the entry level; teach new workers to use Training Manual. Assist in scheduling. Member of team of all job supervisors to serve as liaison between skilled and paraprofessional levels.	Work experience in Weekly Cleaning, Special Cleaning, and Job Specialist. Training in psychology, sociology, and personal relationships. Assist in demonstration-practice sessions for new workers.

Appendix E. (cont'd.)

JOB TITLE	ROLES AND RESPONSIBILITIES	TRAINING AND/OR EXPERIENCES
PARAPROFESSIONAL JOBS: TRACT A		
Estimator	Consult with homemaker and articulate to homemaker and others about the home care program. Arrange appointments, schedule jobs, contact workers. Estimate time and cost for jobs.	Entry as promotion from HOUSEHOLD SKILLED JOBS. Pass arithmetic entry test or train in basic arithmetic problems course. Pass English test or train in remedial English useage. Additional training in personnel management.
Trainer	Train personnel for all jobs in the HOUSEHOLD SKILLED JOBS, and the PARAPROFESSIONAL JOB of Estimator. Assist in development of teaching aids and materials.	Training in methods of instruction. Work experience in all jobs in the HOUSEHOLD SKILLED JOBS and the PARAPROFESSIONAL JOB of Estimator; or, test out of them.
PARAPROFESSIONAL JOBS: TRACT B		
Estimator	SAME AS FOR TRACT A.	Entry as high school graduate with two years post secondary goal. Basic college ccurses. Work experience in all jobs in the HOUSEHOLD SKILLED JOBS; or, test out of them.
Trainer	SAME AS FOR TRACT A.	SAME as for Trainer in TRACT A. SAME as for Estimator in Tract B.
Administrative Assistant	Interview, hire, and train workers. Handle office procedures such as time cards, insurance, social security, income tax.	SAME as for Estimator and Trainer in TRACT B. Skill in typing and office procedures. Family and consumer economics courses. Business law and economics courses.

Appendix E. (cont'd.)

JOB TITLE	ROLES AND RESPONSIBILITIES	TRAINING AND/OR EXPERIENCES
PARAPROFESSIONAL JOBS: TRACT B		
Director	Supervise all personnel. Responsible for all aspects of home care service.	SAME as for Estimator, Trainer, and Administrative Assistant in TRACT B. Drive, desire, hard work. Possible promotions.
PARAPROFESSIONAL JOBS: TRACT C		
Estimator	SAME AS Estimator FOR TRACT A.	Entry as high school graduate with B.S. degree as goal. Basic college courses. Work experience in all jobs in the HOUSEHOLD SKILLED JOBS; test out of programs; or, participate in the training programs.
Trainer	SAME AS Trainer FOR TRACT A.	SAME AS Trainer FOR TRACT B.
Administrative Assistant	SAME AS Administrative Assistant for TRACT B.	SAME AS Administrative Assistant FOR TRACT B.
Director	SAME AS Director FOR TRACT B.	SAME AS Director FOR TRACT B.
PROFESSIONAL JOBS:		
NOTE: While these job titles are not specified here, information is available to so designate.	Training, teaching, administration, research. Testing, counseling, management.	Entry as high school graduate with B.S. degree.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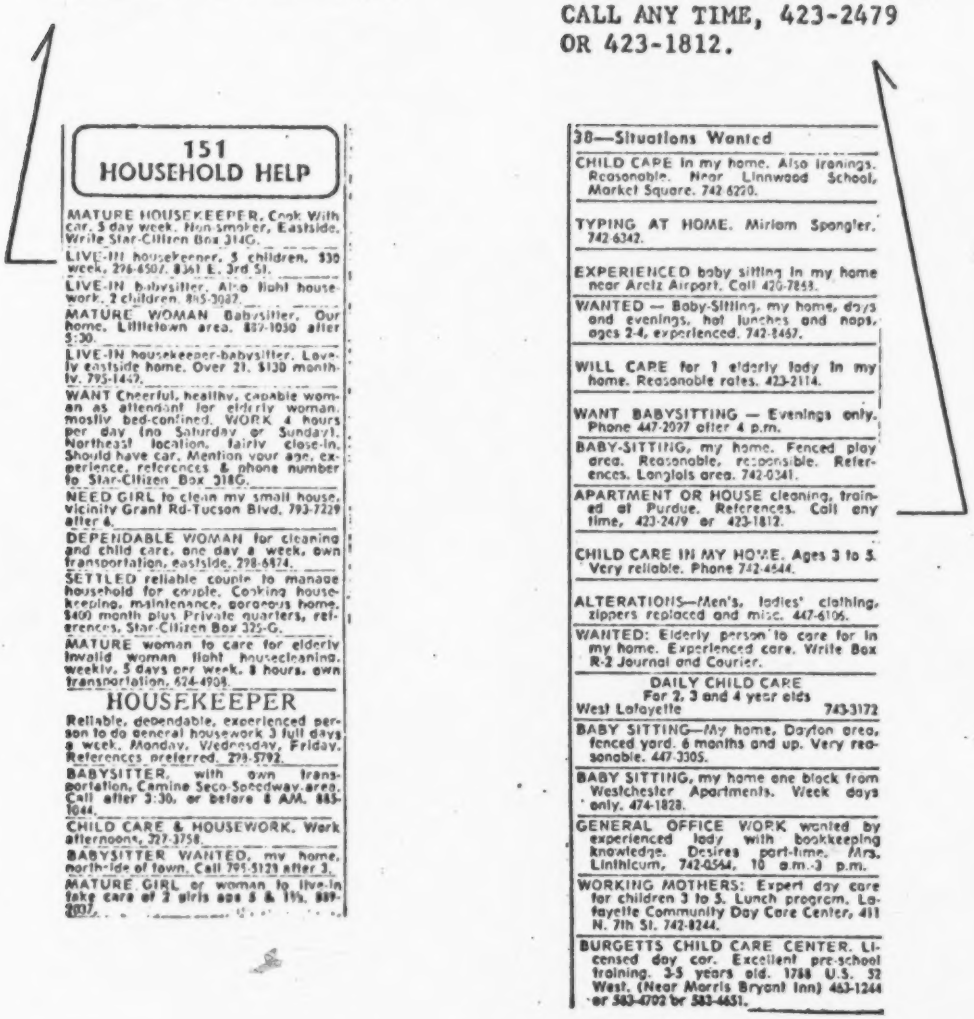
Fischer

THE CLASSIFIED ADS

THIS OR THIS

LIVE-IN HOUSEKEEPER,
5 CHILDREN, $30 WEEK,
296-6502. 8361 E. 3d ST.

APARTMENT, OFFICE, OR
HOUSE CLEANING. TRAIN-
ED AT PURDUE. REFERENCES.
CALL ANY TIME, 423-2479
OR 423-1812.



151
HOUSEHOLD HELP

MATURE HOUSEKEEPER. Cook. With car. 5 day week. Non-smoker. Eastside. Write Star-Citizen Box 314G.

LIVE-IN housekeeper. 3 children. $30 week. 296-6502. 8361 E. 3rd St.

LIVE-IN babysitter. Also light housework. 2 children. 885-3087.

MATURE WOMAN Babysitter. Our home. Littletown area. 887-1030 after 5:30.

LIVE-IN housekeeper-babysitter. Lovely eastside home. Over 21. $130 monthly. 793-1447.

WANT Cheerful, healthy, capable woman as attendant for elderly woman, mostly bed-confined. WORK 4 hours per day (no Saturday or Sunday). Northeast location, fairly close-in. Should have car. Mention your age, experience, references & phone number to Star-Citizen Box 318G.

NEED GIRL to clean my small house, vicinity Grant Rd-Tucson Blvd. 793-7229 after 6.

DEPENDABLE WOMAN for cleaning and child care, one day a week, own transportation, eastside. 298-6474.

SETTLED reliable couple to manage household for couple. Cooking housekeeping, maintenance, gorgeous home. $400 month plus Private quarters, references. Star-Citizen Box 325-G.

MATURE woman to care for elderly invalid woman light housecleaning, weekly, 5 days per week, 8 hours, own transportation, 624-4908.

HOUSEKEEPER

Reliable, dependable, experienced person to do general housework 3 full days a week, Monday, Wednesday, Friday. References preferred. 299-5792.

BABYSITTER, with own transportation, Camino Seco-Speedway area. Call after 3:30, or before 8 AM. 885-1044.

CHILD CARE & HOUSEWORK. Work afternoons, 327-3758.

BABYSITTER WANTED, my home, north-side of town. Call 795-5129 after 3.

MATURE GIRL or woman to live-in take care of 2 girls ages 5 & 11½. 889-2037.

38—Situations Wanted

CHILD CARE in my home. Also ironings. Reasonable. Near Linnwood School, Market Square. 742-6220.

TYPING AT HOME. Miriam Spangler. 742-6342.

EXPERIENCED baby sitting in my home near Arelz Airport. Call 420-7858.

WANTED — Baby-Sitting, my home, days and evenings, hot lunches and naps, ages 2-4, experienced. 742-8467.

WILL CARE for 1 elderly lady in my home. Reasonable rates. 423-2114.

WANT BABYSITTING — Evenings only. Phone 447-2077 after 4 p.m.

BABY-SITTING, my home. Fenced play area. Reasonable, responsible. References. Langlois area. 742-0341.

APARTMENT OR HOUSE cleaning, trained at Purdue. References. Call any time, 423-2479 or 423-1812.

CHILD CARE IN MY HOME. Ages 3 to 5. Very reliable. Phone 742-4544.

ALTERATIONS—Men's, ladies' clothing, zippers replaced and misc. 447-6106.

WANTED: Elderly person to care for in my home. Experienced care. Write Box R-2 Journal and Courier.

DAILY CHILD CARE
For 2, 3 and 4 year olds
West Lafayette 743-3172

BABY SITTING—My home, Dayton area, fenced yard. 6 months and up. Very reasonable. 447-3305.

BABY SITTING, my home one block from Westchester Apartments. Week days only. 474-1828.

GENERAL OFFICE WORK wanted by experienced lady with bookkeeping knowledge. Desires part-time. Mrs. Linthicum, 742-0544, 10 a.m.-3 p.m.

WORKING MOTHERS: Expert day care for children 3 to 5. Lunch program. Lafayette Community Day Care Center, 411 N. 7th St. 742-8244.

BURGETTS CHILD CARE CENTER. Licensed day car. Excellent pre-school training. 3-5 years old. 1788 U.S. 52 West. (Near Morris Bryant Inn) 463-1244 or 583-4702 or 583-4651.